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PROPOSITIONS

Based on the thesis

*Governance in the Practice of Chief Information Officers*

By Harry H.M. Hendrickx

11 December 2007

1. The ten challenges that CIOs have accounted for are the prove that they have had the wrong paradigm for more than a decade to resolve them. Most of the identified challenges – governance objects in this thesis – refer to social processes, not to governance structures. As a consequence the insights of group management and transformational structure have been underutilized.

2. Interaction management is the best way to get a grip on performance of IT. IT operations are so complex that managers do not have the opportunity to explain wrong and right to the end-user. Hence success can only be built on trust in interaction. (This thesis)

3. If for each organizational sub-system (strategic, initiative development, or IT operations) trusted relationships and transparent authority are developed, the performance of the social system will improve. Interaction management and management of social processes are the key to development of these aspects. (This thesis)

4. CIOs support the view that the economic perspective is too limited to manage business and IT alignment. The dimensions value, knowledge and power are considered as important. Therefore managers in the digital world are proposed to put more emphasis on these dimensions while managing business IT environments. (This thesis)

5. Governance is like lighting a fire without matches. If one rubs long enough it will catch fire. This expresses the impact of continuous and consistent action in encounters.

6. Outcome is adequate when the receiver perceives it as it looks like.

7. Principles are useful to provide guidance, but counter-productive to obtain your right and justice.

8. Logic resolves problems, imagination blurs boundaries. (Albert Einstein)
GOVERNANCE

IN THE PRACTICE OF

CHIEF INFORMATION OFFICERS

Harry H.M. Hendrickx
Governance in CIO Practice

Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit van Tilburg,
op gezag van de rector magnificus, prof. dr. F.A. van der Duyn Schouten, in het openbaar te verdedigen ten overstaan van een door het
college voor promoties aangewezen commissie in de aula van de
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Governance in CIO Practice

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This is the manuscript that reports on an investigation that has been conducted since 2002 into the internal governance of organizations. In all chapters great deal of attention has been paid to giving a correct and just account. With much care reference has been made to the authors that have been studied. If the reader is not sure whether the insight is the author's or is quoted from literature, please let me excuse myself for this inaccuracy and for not being transparent. It has been the intention to separate the insights from literature from my own interpretations by including the heading “discussion”. This applies mainly to chapter 3, Literature Review. The remaining text is derived from literature. The chapters 4 to 8 account for the results of the field study and are mainly based on my own interpretations and the accounts of the CIOs. If support was found in literature that supports the assertions, reference has been made to the author. The insights presented in Appendix A, are directly derived from literature or an interpretation from more than one article or author.

Harry Hendrickx
Voorburg, The Netherlands
23 September 2007
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Until 6 months ago I never believed that this investigation really would result in a thesis. It has been a real adventure. After a few attempts to impose a plan on it, I stopped planning, and decided to go on as the opportunity for progressing would arise. The opportunities were sometimes new ideas, sometimes people who I met. And, certainly I could never have done this on my own. Several people were there at the right time to provide guidance, to encourage or to facilitate this investigation. First of all, I have to thank Piet Ribbers who encouraged me to set the first steps in such a venture, and he was also decisive in my not abandoning the investigation but continuing with John Rijsman as the promotor. Both have given me the space and also facilitated me in looking for the right contacts to develop my thinking during this investigation. Also I should thank Peter Duiven who - as my manager in 2002 - has given me the opportunity to enhance my consulting practice through this investigation. Furthermore, I have to thank my close friends as well as the rowing team - the Pinewoodies - who gave their frank insights and information from their own management practice. These became key preparations before starting with the interviews of the CIOs which have been used for the analysis. Then the most critical part was how to find the time with a full time job to do the analysis and the report writing. Here the EuroCIO network has facilitated and enabled me to create that space. Especially Jean Allais, Sylvain Jouanny and Peter
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CHAPTER 1 INTRODUCTION

Relevance of the Topic

1. What is the practice of governance in a digital world? How has it changed compared to the world before internet? What is the best place to exercise governance? In my view it is the domain of action or interaction. The Interaction domain contains all ingredients that shape operation. So, to understand governance practice, an understanding is required of all factors that are brought to the situation of (inter)action. Some of these factors have changed substantially in the digital world. As a consequence Governance practice must have changed as well. The introduction of the personal computer, the internet and wireless telephones have caused a significant transformation of business practices. The adoption of these technologies has reshaped organizations and is still dramatically increasing the number of relationships between individuals, units and organizations.

2. Before, staff had contacts within the organization and these were mostly limited to their own department. Nowadays staff frequently have contact with persons scattered over a much larger geographical area, both within and outside their own organization. Organizational units now have many more relationships over a much larger geographical area. Companies tend to organize
themselves as a network of independent partners comprising a complete value chain. As a consequence the potential influence of managers on day-to-day operations has changed. {Philips Positioning Paper, 2000}

After a thorough analysis the e-Business Program Office of Philips NV has presented its conclusions to the Group’s Board: “business management is relationship management. The drivers for relationship management are communication and information.” One may perceive this as something not new, but technology has changed the character of the relationships from mostly off-line to a combination of off-line and on-line relationships. It has also changed substantially the geographical reach for doing business. In this way new technology has changed the time-space boundaries of each interaction. This unavoidably affects the practice of governance. This is also supported by Giddens who discusses the impact of time-space-regionalization on the formation of society. {Giddens 1984}

3. Several examples have demonstrated the impact of new technology and communication on the way things occur. {Hendrickx 2000} In Milosovic’s Yugoslavia, when the mayor leading the demonstration was in front of the parliament, the mobile phone was critical. It enabled him to keep in touch with supporting groups just outside Belgrade and to know how national police and security would behave towards their march to the capital. This gave the mayor the confidence that he could go into the parliament. He told the interviewer that the extended reach – square as opposed to the
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Belgrade region and more - of his communication had a great impact on his decision. Another example on how technology affects operations took place in Rotterdam. Around the Feyenoord soccer stadium hooligans organized themselves by mobile telephone, which caused police tactics to become less effective. Hooligans can now easily inform each other about the police movements. An environmental defense organization in the Netherlands has coordinated 40 projects all over the country to increase the impact of its actions. This attracted the news agencies, and the organization acquired more attention than would have been the case with these projects in isolation.

4. The implication for managers is that a new dimension should be added to governance practice: on-line connections may have an invisible but far reaching impact for each individual. Individuals are now connected to expected as well as unexpected communities. Managers have to be aware of these connections. How do managers respond to this development? This is not only a change at operational level, also the impact at corporate level can be significant. In the late 90s Shell planned to sink the Brent Spar in the Atlantic Ocean. However, consumer groups organized themselves into a force that succeeded in preventing Shell from sinking the oil rig at a depth of 2 km. The President of Shell Mr. Herkströter commented on this just after the case has come to a closure: ".... We have entered a new era. This is the first time that consumer groups have demonstrated such a power over the decision-making of a large
corporation. We have to revise our communication policy throughout the company." (look for source in Volkskrant)

5. Also Corporate Governance has changed. Burt Rost van Tonningnen discusses the Boardroom Agenda January 2002.\cite{RostvonTonningen2002} Governance becomes hard again, he puts in the headline. He argues that due to uncertainty, pressure from the United states and the media the personality/the character of the Chief Executive, the first accountable, becomes increasingly vital to the company’s image. When things go wrong the CEO is more easily dismissed. Between 2000 and 2002 more than a quarter of the CEO’s of the 50 Midkap and AEX stocks stepped down or resigned early. J. Strikwerda \cite{Strikwerda1999} also recognizes that concepts for Governance have become less useful.\footnote{Both Burt Rost van Tonningnen (1941) and Hans Strikwerda (1952) are influential boardroom and management advisers. Rost van Tonningnen has been elected as the most influential independent boardroom adviser in 2006 by Management Team. Hans Strikwerda is part of the think tank of KPMG, and the Nolan Norton Institute.} The debate around Corporate Governance reflects the changing opinions about the relationship between shareholders and the executive board of the group. He notes that the tendency is to tighten the control on the latter. This tendency trickles down to the operations of organizations. Strikwerda notes that this movement has been transformed into \textit{management control} of Business Units. Although it happens, he argues professionally that it is not right, or at least incomplete. It should be the task of the corporation to add value to the existing activities, unlike the value creation in operational
activities which is the task of the executive board. He continues that the quality of Internal Governance, where value creation dominates management control, is a pre-condition for obtaining good Corporate Governance. However, nowadays the Sarbanes-Oxley Act of 2002 causes extensive control processes dominating internal governance practice.

6. Bruce Bartlett's findings support this view. He has reported on the impact of the Sarbanes-Oxley Act on the performance of business operations.... "Reports suggest that the cost of this legislation (Sarbanes-Oxley Act: author) is extremely high just in terms of out of pocket expenses. But the intangible costs could be far, far higher." He mentions the great difficulty in attracting qualified corporate directors, the enormous amount of distraction they experience from their core businesses as the result of Sarbanes-Oxley and the fact that corporate executives have become much more conservative in their investment strategies. {Bartlett. Bruce 2005} Due to all these developments the interest for Governance gets very intense. Before we enter the research the field of governance should be clarified, since many definitions and perspectives of governance exist.

The field of Governance

7. The field of governance is broad and different perspectives cause confusion. The Governance framework presented by Strikwerda
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will be used to position the different domains of governance and link these to the research question. {Strikwerda 1999} He distinguishes two types of Governance: Corporate Governance and Internal Governance. Corporate Governance refers to the rules and regulations for control and supervision of the executive board on behalf of the owners of the company. Corporate Governance applies to the relationship between the shareholder and the management. Internal Governance refers to the operations of the company. Whereas the quality of Internal Governance is the responsibility of the Board of Supervisors, the profession, the execution and the accountability is the preserve of the Board of Directors. It is the task of the Board of Directors to create value through investments in technology, people and processes.

8. Both Corporate and Internal Governance include four key processes: direction, accountability, supervision and executive action. Direction refers to formulating the strategic direction for the future of the company in the long term; Executive action: refers to the involvement in critical executive (enterprise-wide impact) decisions; Supervision: refers to informing oneself and monitoring the performance of the management; Accountability: refers to giving account to the person who has a legitimate right. Three requirements are imposed on the performance of these processes: the requirement of coordination (the corporation is justified as long as the total value created is more than can be obtained through the market mechanism); re-structuring through investments (at
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operating unit level has the right to invest without intervention from outside); corporate level must create *added value* (a corporation is justified as long as it adds value to its Business Units).

![Diagram of Governance Fields](source: Strikwerda 1999)

Figure 1 The different Fields of Governance

Justification of the Thesis

9. Internal Governance is the topic of this thesis: what is the present Governance Practice of Business Managers and CIO's? The examples suggest that governance practice should change in order to remain effective. Strikwerda argues that Internal Governance is a profession
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in itself, and is exposed to very different developments than is Corporate Governance. He continues that the form of Corporate Governance will not have any impact on the quality of the internal governance. He argues that internal governance, such as giving direction to activities, has to be recognized as a process and managers should be knowledgeable about it. Strikwerda provides ten criteria or steering mechanisms to assess whether the system for internal governance is adequate: determine goals and strategy; shape the corporate culture; determine the operating logic; determine the scope of the operational units; determine the parameters & targets for the operational units; resource allocation; assign and dismiss managers; delegate decision rights and determine reserved power; monitoring process of results; monitor financing, legal system, administrative system, strategic marketing research and more.

10. Strikwerda described the importance of operating logic\(^2\) and also discussed briefly the importance of being explicit about it.

\(^2\) Three terms are used in this thesis for the same phenomenon: Operating Logic, Domain and Practice. The economist Oliver Williamson has used the term Operating Logic because it ‘provides a practical rationale for collective action, clarifying the contributions of each unit and explaining how it relates to others in the organization’. Also other terms are in use. Thompson has defined the term domain as ....... ‘Domain consensus defines a set of expectations both for members of an organization and for others with whom they interact, about what the organization will and will not
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Strikwerda argues... 'that it is not easy to determine a good operating logic. Several conflicting requirements have to be combined into one model: economies of scope, (global) economies of scale, one-face-to-the-customer and local responsiveness. Usually the production side of the value chain has a different dynamic to the marketing & sales side. The dynamics of the production side is determined by the capital accumulation for fixed assets and is often related to the development of production capacity. The dynamics of the marketing & sales side is related to the changes in distribution channels and distribution opportunities in the market, to consumer preferences and purchasing behavior.

11. An operating logic is what the term says, a logic, not a political compromise, actually it is a compromise between practically conflicting parameters for optimization. If an operating logic is a political compromise between two persons it does not have any authority at lower levels in the organization, everybody is waiting to see one of the managers fail. And then the organization will be changed again. Strikwerda argues that ... 'A good operating logic do........'  {Thompson 1967}Karl Marx used the term Practice as a set of rules that expresses the characteristics of a set of activities. {Giddens 1984} The Operating Logic is the object of Internal Governance. Its focus is on value creation. This is what business managers, Chief Technology or Chief Information Managers and Enterprise Architects should understand..
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has authority because the stakeholders involved are convinced that the market and the characteristics of the business need it.'

12. Rajan and Zingales {Rajan 2000} demonstrated that the characteristics of operating logic changed substantially the effect of legal contracts, the power derived from physical assets and the bargaining power of employees. Human capital compared to inanimate assets has become so important that the large vertically integrated firms had to break up due to more openness of the market in which scarcity of factors has changed. He has demonstrated that:

- physical assets have become less important due to more competition. Its scarcity is not an issue anymore. At the same time employees have more outside options due to the increased transparency of the market and increased mobility, which increases its bargaining power;

- a firm has to become distinctive in quality and cost, and needs innovation. Innovation comes from human capital.

The growing prominence of corporations where physical assets are unimportant relative to human assets raises a number of governance issues, e.g. if shareholders have control over managers, this does not imply anymore that he has control over its assets or human capital.

13. Authors argued that power comes from control over valuable resources. The knowledgeability of the person has gained importance over physical assets. However, physical assets can be
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sold at will, and the law does not allow to sell a person or buy one without the consent of the person himself. Furthermore, an individual can also not pledge his human capital to someone else for any significant length of time through contract. Therefore control over human capital seems to be a greater source of power than control over physical assets. However, all control rights are residual, not allocable through contract. Therefore the internal logic has to be different. How do managers cope with this change?

14. In summary. Technology, as well as the environment, has changed substantially. This has changed the practice of many organizations, and demands a different approach in governance. The view is supported by influential management consultants. Both Corporate Governance and Internal Governance should change. Also, in my own practice as consultant, I have noticed phenomena in society and in multinational companies that demand a change in governance practice. However, what kind of change is needed? What is the difference between traditional governance and modern governance? In the next chapter the stage of this investigation will be elaborated.

Mise en scene

15. The main theme of this thesis: has governance practice changed in organizations that are ubiquitously using digital technology? How can a manager remain effective in a digital world? Does he have to change his governance practice? Are the rules of the game different from before the internet era?
Time-Space

16. These questions concern the period between 1980 and 2006, and especially for organizations that have adopted digital technology. The relevant period over which the change in governance is studied, starts at the adoption of PCs during the early 80s when the Apple and IBM PC were introduced. The personal computer replaced secretarial and computational functions. Then applications such as the spreadsheet and e-mail changed the processing of finance and administration, the exchange of information in organizations and communications. As a consequence of the shift of work during the early 90s administrative jobs (e.g. the personal assistant) turned into communication jobs, and positions that supported the organizational administration rather than personal administration. Then from 1995 onwards the Internet initiated the adoption of a new technology and caused a change in operating models.

17. The internet and wireless telecommunication have triggered the phase of integration: sharing resources, sharing knowledge, sharing assets, sharing information. This integration is demonstrated by three processes that support business operations: Customer Relationship Management, Supply Chain Management and Knowledge Management. Portals have been an important enabler to sharing knowledge over large geographical areas and between the

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3 These developments are recorded from my own experience as a marketing manager (Product marketing; Strategic Marketing; Business Development) in an IT Research organization, the
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different disciplines. The maturity of networks as well as end-users create communities interested in certain topics, professional networks and value webs that have a commercial goal. This trend has changed the immediate environment of staff. It changed from a mono-cultural context to a multi-cultural context. The term culture should be interpreted more broadly. Not only the French or German culture is meant, also the culture between different disciplines or different organizations. In a supply chain, manufacturing and sales can now work together much more closely, because distance or time-space aspects are not a constraint anymore. Also relationships between West European staff and Indian staff becomes a normal situation within the outsourcing business. Also the social context has changed significantly due to increased market dynamics and changes in operations.

18. The past two decades can be divided into two periods: 1985-1995 as the pre-internet era during which the automation of single tasks prevailed; 1995-2005 as the internet era during which internet and digital technology has enabled the mobilization of new forces – like the consumer organization power during the Brent Spar case – and global business becomes much easier than before. Now the ubiquitousness of IT is a fact. The developments during this timeframe are important for the set-up of the Survey among managers. It includes managers that have at least 20 years experience.

Computer Division of Philips and the changes of complete departments at a traditional telecom operator between 1985 and 1995.
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in management in order to cover part of both periods. To enlarge the aspects of culture and social differences, managers have been selected from different countries. One group of managers from the Dutch context, and one group of Chief Information Officers (CIO) from different European countries. The CIOs originate from France, Belgium, Netherlands, Germany and Austria. Due to time constraints only the narratives from the CIOs have been analyzed. The other group provides challenges or support for the conclusions drawn.

19. In brief the PC era was just the beginning. The internet era gave an enormous leverage to benefit from the potential of digital business. More integration and accelerated operations became the norm, dragging social developments into new and unknown seas.

Type of Organization

20. What is the context of these respondents that makes them struggle with governance? Governance change is expected to be specifically relevant for organizations that actively seek to exploit Information Technology. However, there is only a small percentage of people who know this from their own experience. According to Sennet, an American sociologist, only some 8% of all companies have adopted the new digital concepts in their operations. {Heijne 2006} These may be called the cutting edge in working environment. If this perspective is adopted, the only limitation that exists is to select companies for the Survey based on the degree of IT adoption, not on
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the size of the company. Large multinationals certainly belong to this category. Smaller companies often do not have the mass to have digital operating logic, and, will not be included. However, managers from smaller companies with a high degree of IT in their operations also qualify for the Survey. Furthermore respondents qualify because of their experience in management positions, or the degree of leadership that has to be demonstrated. Often these managers are accountable for a functional domain within the organization, or have a CEO accountability.

Generalizability

21. What is the impact of investigating such a diversity of organizational forms and sectors? Governance is relevant for each organizational form. Therefore any organizational form is included in this study. However, does this diversity of organizations add value to the investigation? It is expected that a wider diversity of organizations will give better results because generalizability will be greater. If conclusions can be drawn from practice in the array of different organizations, they are then applicable to many different situations. Generalizability is supported because of three reasons. Firstly, different types of organizations from several sectors are included. Secondly, two different profiles of managers have been included in the Survey. The second group has been used as a reference. I is not included in the full analysis yet. Finally, two different periods have been considered.

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22. Governance is something universal and deserves a universal modelling approach. Governance is an activity that is exercised by a human being who wants to influence operations for a predetermined goal. Since each organization exists only because it has a goal to achieve, each organization is potentially eligible for this research. Furthermore governance is not attached to a certain type of leader or manager. In the Survey mostly top managers have been included, some managers with a position as entrepreneur or chairman of a political organization, some with a position as vice-president in a professional organization, where they do not have authority. Even participants in a network without authority are a potential group to be included in the Survey. Finally the length of the period of time the respondents have been in management functions is useful for understanding governance practiced during two distinct periods. The respondents that have been included in this analysis of the narratives all are accountable for the IT function of medium to large global organizations. The other narratives are used as a reference, and may be added at a later stage to this research.

Aspect Areas

23. Does the investigation deal with the impact of technology on governance only? Or, are more aspect areas covered in this study? Several aspect areas can be identified: management, people, technology, processes, information, information systems, technical infrastructure, security and governance. This thesis takes the
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challenge to visualize governance practice and its object: (inter)action. This implies that all aspect areas are included in the investigation. During the literature study I got fired by the challenge to understand how all these aspect areas are brought together in operations. However, to make-it-work all the different aspects have to comply. A method has to be found to visualize the different aspects of interaction in order to demonstrate the characteristics of that situation. As happens with paint development where each new ingredient changes the outcome of the color, the organizational experience changes each time a new ingredient is added. Paint may turn from white into desert yellow or canary yellow. A new technology or activity also evokes quite a different experience. To express this effect in governance practice – a different additive, a different outcome - is the most challenging part of this thesis. So, technology may be the dominant trigger for the change of governance practice, but in this thesis it is considered just one of the many aspects that shape the outcome of (inter)action.

24. The social aspect has triggered my curiosity more and more during this investigation. My search to visualize the dynamics of business architectures has brought me to this aspect. I started with Coase and Williamson, to understand the economic Transaction Cost Theory on governance. {Rindfleisch 1997}{Williamson, Oliver E. 1979}{Williamson 1981}{Williamson 1991}{Powell 1990}Then I studied the contingency theory. {Thompson 1967}{Pfeffer 1978}{Tillquist 2002} {Volberda 1992}However, I missed dynamics
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in this theory. Then I looked into the system dynamics of J.W. Forrester and Gharajedaghi, who started to analyze the influence of counter intuitive behavior on the outcome of socio-technical systems. {Forrester 1961}{Forrester 1971}{Forrester 1991}{Gharajedaghi 1999}{Senge 1993}{Senge 1992}{Sterman 2000}{Simon 1961} One of the insights from this strand is the importance of feedback in socio-technical systems and the transparency of reinforcing and negative feedback loops. Also the structural issues in systems – often caused by human beliefs or the specific context - that cause limitations to the systems performance, have been important insights from these authors. These academics have also visualized what I saw arising during my consulting practice between 1992 and 2003. The world was becoming more and more an amalgam of networks, that like X-ray look through all other types of organizational boundaries. Several academic studies have enabled me to see the mixture and the underlying movements of social dynamics. {Ghoshal 1996}{Checkland, Peter and Howell, Sue 1998}{Granovetter 1985}{Castells 2000}{Nohria 1992}{Pfeffer 1978}{Powell 1990}{Santos 2003}

25. Then I explored the social constructionist view of Bijker et al. and of Gergen. {Wiebe E. Bijker}{Gergen 1994} Bijker has demonstrated through the longitudinal analysis of the impact of technological know-how on the needs of different social groups. This study has demonstrated that technology influences the course of technological as well as social development. {Wiebe E. Bijker}{Barley
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1986}{Barley 2001} The importance of Gergen is demonstrated through his view on interaction as the primary locus of knowledge building and performance. {Gergen 1994}{Cooperrider 2001}{Cooperrider 1998 / 1999} This is quite congruent with my analysis some years before in which I concluded that the object of governance should be interaction instead of transaction.{Hendrickx, H. 2003} These academics have had quite some influence on the way I have constructed the interaction management model and conducted the empirical analysis. So far I still did not have a framework to bind all these insights together in the empirical analysis., but Barley's "Bringing work back in" leads to Giddens' theory on The Constitution of Society. {Giddens 1976}{Giddens 1979}{Giddens 1984}{Barley 1986}{Barley 1997}{Barley 2001}This theory provides a framework for bringing all the aspects of interaction together, and can be used as the foundation for building the empirical analysis of governance.

Variability in Governance Practice

26. Do governance practices vary with variations in context, time-space, type of organization, profession? I tend to believe this is the case. Therefore I have included two distinct groups in the Survey. One is homogeneous in the sense that all are Dutch respondents, all business managers and have at least 15 years of experience in management functions. However, they have little experience in the field of IT. The second group is homogeneous in the sense that they
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all are accountable for the IT function in large organizations, and have longstanding experience in the Information Technology sector. I will investigate the practice of governance in these contexts. Maybe the two groups do not have a significant difference in internal governance. However, the context is already so different that they need an understanding of other contextual factors that have different impacts on operations. Or, said in another way: the same governance practice will vary in effectiveness if applied in a different context. Or, what worked well before 1995, may not work anymore in 1995. Due to the limited resources only the CIO group has been studied and only in a limited way the analysis of the business managers has been completed for this thesis.

27. Another reason to assume that governance has to change is the increase in the reach and intensity with which people can have contact with each other. Working contacts take place within someone’s own well-known task environment. However, this task environment has sometimes become much bigger than before 1995. Before it was limited to the department in which one was employed. Now working contacts may be spread around the globe, specifically in the pharmaceutical, chemical and consumer electronics industry. Also it is quite easy nowadays to join interest groups that operate worldwide as time and costs are limited to a minimum level. This has increased considerably the number of external influences on the individual. Therefore the potential direct influence of a manager is reduced. He has to compete with influences from outside. His
communication is less, because his employees are more exposed to external influences and less visible. Philips Electronics N.V. has analysed this thoroughly and the Board of Directors has started a huge program with which to react properly to these new trends. {Philips Positioning Paper, 2000}

Personal Motivation

28. Writing a PhD has attracted me since I left university. However, I started the research only 20 years later, immediately after a Business Architecture project. The Chief Technology Officer (CTO) at a Mobile telecom operator had a huge challenge around the year 2000. Market dynamics were enormous, as the wireless technical infrastructure became increasingly complex. One technology after the other (GSM, GPRS, UMTS) had to be integrated into the telecom network. This has been a real burden for the sector. This CTO requested me to analyze what the impact of the new strategy was - expressed in four principles: real time services, dynamic services, personalized services and seamless partner relations. What will this sector look like in 10 years time. A small team of four analyzed the new architecture of the sector if these principles were applied. After this analysis I became convinced - with my colleagues - that the new characteristics of a world that was evolving as shown by this strategy, would change significantly and have an impact on both the social and the technical aspects of life. And at the same time
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governance would have to develop a different practice, assuming that if the context changes, governance has to change as well.

29. Not only the rules of the game change, also the insights of a manager have to evolve to remain effective. These insights should relate to at least three aspects: the worldwide reach of contacts; the speed of communication; the separation of location and work. I became quite curious about the impact on traditional governance practice in a sector where business is modularized in order to respond to the market expectations, and the number of relationships has increased tremendously. How can a manager coordinate all these relationships and assure their effectiveness? Multiple value chains arise and co-exist, and modularization partly reduces complexity. On the other hand the increase of coordination effort and the rise of sub-cultures that are alienated from the customer are new and have a gradual learning curve. What does effective governance look like in such a world? I really want to explore this topic empirically, and visualize the relationship between the ingredients and the outcome of governance. It is not about proving that something is valid or not.

Relevance of Research

30. Information Technology does not only provide opportunities, undesired effects can also be expected. During 2006 the media demonstrated that technology was not alone in creating a change in organizations and in their social context. Corporate governance – read control over CEOs and their executive action – has also been a
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driver. IT enables general control to leapfrog to a very detailed control. Now many more regulations can be checked against facts. This has triggered attempts to formalize control structures at a very detailed level. The Sarbanes Oxley Act of 2002 \{IT Governance Institute 2006\} in the US, forces companies that are listed on the New York Stock Exchange to apply 'best practices' in control, in order to reassure shareholders that financial statements are trustworthy and correct. The idea is that in this way shareholders can be protected from fraudulent financial debacles such as Enron and Worldcom. Accountants have developed a framework to guide companies in the control of sound practice. The implication for governance is that now shareholders and companies overdo the control side of governance, and have too little attention for performance. \{Bartlett. Bruce 2005\} Apparently, tension arises between the control structure and the performance. Then governance practice becomes relevant. How should a manager deal with this tension?

31. IT also pushes towards achieving economies of scale, leading to standardization and harmonization. In very large companies it crosses national borders, in the health sector it crosses the different disciplines. Especially it occurs when companies decide to introduce enterprise resource planning for a more centralized administration of the resources. Two examples demonstrate which forces drive the dynamics. This type of transformation requires a high budget and is very large scale. In the short term standardization to reduce

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complexity of the transformation is more economical. However, this has a downside as well. With standardization also value creation is destroyed, offsetting the benefits of the new approach. Some years ago the stakeholders of a specific business practice at a chemical company had requested advice on how to deal with this tension between economies of scale and effectiveness during an ERP transformation. {Hendrickx 2001}This practice has almost lost its leadership in the world market due to the overruling power of the bulk chemistry practices. The stakeholders believed that the information policy would be the pivot to meet this challenge. The information policy was believed to be the major topic for the resolution. The advisors could agree on this. However, they recommended to change not only the information architecture, but also the governance practice. In my opinion the resolution is embedded in both the governance of the transformation process as well as the new governance practice after implementation. Too much focus on economies of scale had overruled the attention for added value of parts of the business. This problem arose due to unbalanced governance.

32. In the mental healthcare sector in the Netherlands a notable manager and an academic have made an appeal. After analyzing developments, trends and controversial practices with IT since the 1980s, they have drawn the conclusion that more attention should be paid to the heterogeneity of processes. {Sponselee 2006}If one were to look at these cases with the eyes of a shareholder,
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standardization would probably increase the short term value of his shares. If the perspective were taken from the point of view of the customer and the utility of the products and services, the approach would be different. The ensuing tension is not isolated to these cases; it is a structural tension. It is a matter of governance. Villa Felderhof 26 August 2006, a talk show on television, broadcast an interview with Fenterner van Vlissingen who has just died at the age of 61. He was a very successful entrepreneur, philosopher and environmental protectionist. He argued that economic life is unbalanced. There is too much aggressive attention for short term profits by shareholders, and there is too little attention for what the added value for the stakeholders should be. This is a side effect of a too great focus on short term results.

33. What is the consequence of too much focus on control and regulation? This is illustrated very well by Kaasenbrood et al. for the mental health sector. {Kaasenbrood 2006} The intention to prevent problems in this sector has an adverse effect on the treatment of the so-called “care avoiders” group. ….. in translation “because the members of this group refuse assistance or show deviated use of it (e.g. a random intake of medication) the social worker does what is feasible and not what is secure or required according to the regulations. This makes him more vulnerable to complaints than his colleague at a regular policlinic, and he is therefore also exposed to the related procedures and sanctions. Regulations complicate the assistance to refusers of care, so that their survival is not sure at all
and this target group is increasingly less attractive for social workers.” The authors conclude that the regulations covering the mental health care sector is too prescribing for the scheduling as well as content of day to day care. This caused to change the attitude of the social worker, and focus more on what is required for regulation, instead of trying to achieve the most feasible. This example demonstrates how regulations may have an undesired effect.

34. IT enables, but also complicates and renders invisible what really happens. In an attempt to reduce complexity too much regularization, too short term focus and too much simplified transformations have substantial and undesired effects on the outcome. These should be balanced by a more comprehensive understanding of practice in a digital world and subsequently by a suitable governance practice.

Problem Statement

35. Simultaneous technological and social developments have created a situation in which control reigns over performance, employees have more bargaining power and the control over physical assets does not guarantee the accumulation of rent anymore. The decrease of effectiveness of contracting to gain control over executives and employees in the interest of shareholders, has made residual rights, and consent of employee much more important. Rajan and Zingales have suggested to change designs of organizations instead of
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discussing how to strengthen the rights of dispersed owners (shareholders) and spend more time on mechanisms to control and retain human capital. This thesis does not focus on the design of organizations, neither on how to strengthen the rights of shareholders. In the following chapters the focus is on the internal logic of organizational operations and how managers can retain control over its development.
Problem Statement

One of the major problems in organizations is the change of governance practice as a result of the substantial increase in the number of social relations of employees. The classical Sloan management school considers that implicitly the formal structure has three functions: the implementation of strategy, the distribution of decision rights and the influence on people's way of thinking. Management had a monopoly on information and knowledge. However, with internet this monopoly has been broken. Organizational structure does not influence anymore who possesses information. Information can be collected by anybody. The structure does not steer anymore. How has this phenomenon changed governance practice? How do managers shape the operating logic in modern digital organizations?
CHAPTER 2 RESEARCH APPROACH

“Most of the things you can measure aren’t interesting (...) most of what’s interesting you cannot measure”, Marcia Angell, in Science, vol. 262, 1 October 1993:25

Research Context

1. To decide on a research strategy the context should be understood. Why in the first place does governance attract a great deal of interest? There are several explanations which can be found for this phenomenon: technological adoption; complexity of the IT function in organizations; debacles of large corporations. Technological developments are the biggest driver. The adoption of digital technology has caused a real revolution in economic activity over the past four decades and has reshaped business operations completely. It has aroused the interest of both academics and business management to discuss the impact on productivity and the coordination of economic activities. This has triggered research into the field of governance in firms and network organizations. {Williamson, Oliver E. 1979}{Williamson 1981}{Williamson 1991}{Malone 1987}{Clemons 1992}{Powell 1990}{Nohria 1992}

2. However, the technological development has not only triggered different types of coordination structures, it has also created a new
field that needs distinct governance practices. The Information Technology function of organizations has become so complex that it justifies special attention. Since 1996 Weill et al. from the MIT in Boston have conducted surveys with more than 256 CIO's of companies worldwide to understand how Top Performers have managed their IT. As a justification for this research Weill et al. have listed the major reasons for paying attention to IT governance. {Weill 2004} They argue that from the IT perspective the interdependency between the different components of the organization is very big and needs transparent governance.

- Firms with above-average IT governance performance had a Return on Assets that exceeded the 20% of other firms.
- IT investments exceed 50 percent of the annual total capital investment of many enterprises.
- IT spending originates from all over the enterprise. IT governance arrangements, when well designed, distribute IT decision-making to those responsible for outcomes.
- Well-developed IT governance is required in order to respond quickly to new business opportunities.
- IT governance is critical to organizational learning about IT value.
- IT value depends on more than good technology. The roles of technologists and business leaders become increasingly intertwined. Successful firms do not only make better IT decisions, they also have better IT decision-making processes.
- Senior management does not have the bandwidth to consider all the requests for IT investments that occur in a large enterprise.
- Their message is that leading enterprises govern IT in different ways, and that it pays off to have the right governance structure and practice.
• More recently governance has also been at the centre stage due to the debacles of Worldcom and Enron. {Lerach Coughlin Stoia Geller Rudman & Robbins LLP 2002} {How Did WorldCom 2002}. These two cases aroused the interest of accountants worldwide, and resulted into the adoption of the Sarbanes Oxley Act in 2002.

3. ENRON, April 8, 2002. In late 2001, Enron revealed it would incur losses of at least $1 billion and would restate its financial results for 1997, 1998, 1999, 2000, and the first two quarters of 2001, to correct errors that inflated Enron’s net income by $591 million. The impact of this restatement was enormous as Enron’s stock dropped 91%. Soon after, Dynegy Inc.’s attempted acquisition of Enron fell through, Enron’s debt was downgraded to junk bond status and its stock dropped to just $0.26 per share. On December 2, 2001, Enron filed for Chapter 11 bankruptcy.

WorldCom Fraud Executives at telecommunications giant WorldCom perpetrated accounting fraud that led to the largest bankruptcy in history. The fraud was revealed to the public in June 2002 and WorldCom filed for bankruptcy in July 2002. Evidence shows that the accounting fraud was discovered as early as June 2001, when several former employees gave statements alleging instances of hiding bad debt, understating costs, and backdating contracts. However, WorldCom’s board of directors did not investigate these claims. In June 2001, a shareholder lawsuit was filed against WorldCom, but it was thrown out of court due to lack of evidence. When the Securities and Exchange Commission (SEC) launched its own investigation in March 2002, it was discovered that the prior claims were valid. As a result, the SEC filed a civil fraud lawsuit against WorldCom and federal charges were filed against several executives.

4. These scandals led to the amendment of the Act ... “to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes” {FindLaw 2002} The increase in attention for governance among companies has accelerated since the Senate and House of Representatives adopted the Sarbanes Oxley Act. It demands transparency and control over IT resources that support the provision of the annual financial statement of companies listed at the New York Stock Exchange. CEO and CFO have to sign for the annual statement and may go to prison if they do not comply. A spin off of this Act is the attention for more professional and transparent internal governance. This attention is demonstrated by
the interest of companies in developing compliancy with the CobIT processes. CobIT provides a framework of requirements for internal Governance, with a focus on IT.

5. All this demonstrates a pressing need for a better understanding of the management of complex digital organizations. The Sarbanes Oxley Act focuses on improving the transparency of decision-making and control processes as regards the preparation of the financial statement. However, control is not sufficient to cope with the increasing complexity of technological development. Especially technological development demands a capability of careful internal governance. It renders existing processes obsolete and triggers new organizational behavior. It is this continued change of the operating logic that should concern managers. This thesis aims therefore to aid/to stimulate the development of the capability for governance in network organizations. A framework for IT Governance has been developed by Weill et al. (Weill 2004), but this does not yet resolve the transformation to another operating logic. This framework gives guidance concerning the structure of IT Governance, not the operational requirements, nor does it concern how management and staff should behave to make it work. The factors critical for operations include, the maturity level of governance processes or the corporate culture.

6. During the interviews it became apparent that the same challenge presented itself to managers, who noticed that the wide availability
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of information meant that they had to behave completely differently when intervening or communicating between the various hierarchical levels in the organization. Even different personalities were needed for the new way of working. The goal for this research paper has to be chosen from within this context.

Research Goal

Personal motivation

7. Before entering into the discussion on the Research Approach, the Research Goal needs some clarification. And, related to that the personal profile and motivation of the researcher is of interest. Does he want to prove anything? Does he want to get a better understanding? Tulder has provided researchers with a framework to identify what kind of researcher is in action. {Tulder 1996} He distinguishes the conceptualizer, the diagnost, the designer, the implementer and the involved evaluator. He has provided questions that reflect the compliance to one or more of these profiles. The profile that resulted is the “applied action researcher”, meaning that the designer and implementer profile prevail. The researcher is interested in focussing on the intervention in the research object, i.e. internal governance. He emphasizes the different scenarios for improving internal governance. There is no drive to prove anything. He does not have the drive to convince people either. He has the
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drive to understand internal governance and gain insights that facilitate managers in improving “internal governance practice”.

Goal and Deliverables

8. These personal interests and the justification to start the research project have resulted in the following Research Goal: “to provide managers with a framework for governance practice in a digital world, which facilitates the understanding of its challenges and the ways to cope with them”. This framework should contain a model for internal governance, critical factors, and related insights or patterns. This set of results together provides a description of the characteristics of the capability that is needed for internal governance. The model was initially based on a literature review, and tested against the practice of business managers and Chief Information Officers. The results of this research will be summarized in three tables: a contextual frame (table with factors and values), an overview of management insights (insights and their application), governance objects and a table with “how to” scenarios of interaction (object, challenge, “how to”, potential). Now the Research Goal and the deliverables have been determined, sub-questions can be formulated and the feasibility of the research project analyzed.

Existing management models

9. Ten Have et al. have collected the 56 “most” influential management models in the world, of which 36 are related to organization and people and behavior.
Research Approach

10. The Research Approach deals with the question “How” the research will be done. First the questions will be analyzed and sub-questions formulated and justified. Each sub-question is a break down of the work that has to be done during the study. Each sub-question should provide the researcher with a specific answer. The feasibility of the research depends on personal factors and circumstances of the researcher. These will be dealt with in the next section. After the discussion of the constraints and possibilities of the research project, the alternative approaches for the research are analyzed and their appropriateness discussed. The mixture of feasibility, personal resources and methodological know-how are the ingredients which create the approach.

Research Questions

11. In order to furnish the governance framework with results, the answers to the following (sub-)questions have to be obtained. Main question. The digital world is changing from hierarchical organizations towards organizations that rather resemble network organizations. What is the prevailing governance practice of managers in network organizations? The transaction cost theory has been the prevailing governance practice for managers for several decades: constrain opportunism by legal contracts and acquire the ownership and authority to control. Some academics have argued that this is too limited a view in itself {Granovetter 1985} {Rindfleisch 1997}{Ghoshal 1996}, others have argued that the transaction cost
theory is obsolete because the object of governance has changed from hierarchical organizations to a more networked form in a digital world. {Clemons 1992} {Castells 2000} {Achrol 1991} {Achrol 1997} {Powell 1990} This strand expects that the adoption of abundant technological solutions has changed governance practice. The investigation aims to identify the insights that clarify this argument.

12. *What is the context for internal governance? What characterizes the difference in context between the period before and after the adoption of Internet?* Several academics have argued that the context has changed fundamentally. Some of them have also argued that this influences the dynamics of organizations. {Achrol 1997} {Asseldonk 1998} {Castells 2000} {Clemons 1992} {Gharajedaghi 1999} {Giddens 1984} {Malone 1987} {Nohria 1992} {Powell 1990} {Senge 1992} {Senge 1993} Hence, if changes in context change the dynamics, it is critical to the governance theory to understand the change in contextual factors. These factors may demand a different governance approach. The analysis of this question may provide a basis for getting insights into the relationship between context and effectiveness of a specific governance style.

13. *What is the object of internal governance: the organizational entities (individual/unit/organization), the relationship or the interaction between the entities? Simplified: the individual, the relationship or the interaction.* The relationship and the interaction have been the
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drivers of this research, contrary to the prevailing practice after World War II which emphasized the governance of individuals and organizational units. {Williamson, Oliver E. 1979}{Rindfleisch 1997} Since 1980s the strands of relationships have entered the scene. This was due to the insight that economic life was increasingly more embedded in social networks. {Achrol 1997}{Ackoff 1972}{Castells 2000}{Granovetter 1985}{Nohria 1992}{Powell 1990}{Ritter 1999}{Thomas W. Malone 1997}{Tillquist 2002}{Schön 1983}{Pfeffer 1978} These academics have found evidence that the relationship and interaction should be the object of governance. This is a premise of this thesis, but also much support for this argument has been found in literature. What is the prevailing practice?

14. Which insights have been identified in academic literature as relevant for governance? What is brought to the situation by managers in practice? Many academics have investigated what the important factors for governance are. Opportunism, ownership, trust, culture and dependency are just a few of these factors. The challenge in practice is to ensure the right mix for effective interaction. What can managers bring to the situation to influence the course of developments? The literature review has an economic perspective from Coase in 1937, to Williamson, Malone and Clemons on coordination mechanisms. Achrol, Gergen, Schön, Granovetter and Giddens have a more social perspective. Forrester, Senge, Sterman and Gharajedaghi have adopted a systems perspective, and
Thompson and Pfeffer a contingency perspective. In reality all these perspectives are relevant for operations. If it is understood what factors are the most appropriate ones for governance and how they are interrelated, managers can exploit or develop them. During the literature review the factors that have been linked to governance will be discussed.

15. How do these insights relate to each other? Can the governance situation be visualized in a model? The literature review results in a model for "governance of interaction". First the structure of interaction has been analyzed. Then the insights that are relevant in the context of interaction. Based on these insights will be discussed how, where and when a manager can influence the course of operations. If a comprehensive model can be constructed it may be easier to discuss the topic of governance and it may become easier for practitioners to understand the domain.

16. What are ways for the manager to influence interactions? What patterns can be identified in the governance practice? Finally the researcher has asked himself in what ways a manager may have an influence on the course of action. A universal model arose that may provide guidance to managers on the possibilities they have in governance practice. Have patterns been identified? The insights into the influence on interaction are expected to improve the predictability of governance action.
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17. What is the desired result of interaction? Since this research is about social processes, the results can be manifold. The added value that can be expected is, that after intervention it will be easier to predict the type of outcome. The outcome is determined by the direction that is required. The exact path is not very relevant. It is more relevant to understand what conditions facilitate the achievement of that goal. Hence the thesis will not extensively discuss the outcome of governance. However, it will discuss the factors that may help to reach the end goal.

18. How do managers perceive the usefulness of the "Governance of Interaction" Model? The model will be tested with one group. The model appears to be a tool to transfer experience from one generation of managers to another. It may also be a tool for the managers themselves to apply during practice. Often managers have a kind of personal karma that they apply. This investigation may result in another one. See also the Financial Times manager tools. If answers have been found for these questions, the research aim will have been achieved. However, what is the feasibility of reaching that point?

Feasibility

19. The feasibility of this research project depends on three factors: personal resources, secondary resources and primary resources. What is the availability of personal resources? What secondary
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sources can be used? And, what primary resources can be used? {Tulder 1996} The researcher has limited resources at his disposal, hence the research strategy should be aligned with these. Personal resources are the time, experience, network and financial means that are required. The personal resources show diverse levels of availability. Time is the most scarce factor. The researcher is a full time consultant. Acquisition and execution of client work has always had the highest priority and the employer is not inclined to invest in knowledge building. During the last 3-4 years the investigation had to be done at the expense of spare time. As regards the experience and knowledgeability around the topic a more positive picture arises. For more than seven years the researcher has been working in the field where governance has been a real concern. Since 1997 he has been developing the profession of architects within Capgemini. Architecture is very close to the topic of governance, and he had the opportunity to write a book on this with a few experienced colleagues {Rijsenbrij D., Schekkerman J., Hendrickx H. 2002}.

20. The way the researcher has practised business architecture has also been very close to the field of governance. Developing business architectures is one of the ways to align the business and IT disciplines. This topic has been on the CIO agenda for more than a decade, and he has always been working in this field. The researcher has furthermore been working with CIOs who have faced this
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challenge. These experiences provide him with real life experience on the topic, and the context within which it plays.

21. Having a job in the middle of the topic of investigation provides also useful contacts. The network necessary to find primary and secondary resources has therefore not been very difficult. After a thorough screening of the research and the researcher the EuroCio network\(^4\) adopted the research for one of its working groups, and mobilized the respondents for a Survey. The working group provides the researcher with an opportunity to test the model with practitioners. Furthermore consulting assignments in the field of enterprise architecture, IT Strategy, IT Governance and Business IT Alignment have provided the researcher with a rich reservoir of experiences related to the topic. The contents of these assignments have not been brought into the research, but they certainly have played a role during the process of decision-making on how to conduct the research, and during the analysis phase. In the latter phase this appears when some interpretation was needed.

22. Secondary resources have not been a bottle neck. Both the internet as well as very modern academic and local libraries have provided excellent services. The primary resources - a group of business managers and a group of CIOs - were easily mobilized. The CIOs

\(^4\) The EuroCIO network consists of networks of national network organizations of Chief Information Officers in Europe. These networks aim at an exchange of experience of CIOs for CIOs. Recently - July 2006 - this network has started a working group on Governance.
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were contacted through the EuroCio network. The network of business managers has been mobilized from the researchers own network. These three factors lie at the foundation of the research strategy.

Research Methodology

23. Where does this position the research in the field of methodologies? Allen S. Lee has developed a framework that clearly illustrates and relates the position of the different approaches to organizational research. This part draws heavily on Lee. {Lee 1991} Positivists claim that their methods are the only truly scientific ones. These methods are based on four principles: the principle of falsifiability, the principle of logical consistency, the principle of explanatory power and the principle of survival and on-going testing of the theory. The interpretive approach maintains that natural science is inadequate compared to social science. Hence their methods have to be different. In interpretive studies there is often talk about the "social construction of reality". The interpretive approach reckons that meanings and interpretation depend on contexts and social realities (hermeneutics), or it is focused on the interpretation of ...."the meanings that the local behaviors signify to the human subjects ... themselves"

24. Lee argues that both approaches have something to offer, and provides a framework that consists of three levels of understanding:
"The understanding of the first level belongs to the observer of the human subjects. This understanding consists of the every day common sense and every day meanings with which the human subjects see themselves, and which give rise to the behavior that they manifest in socially constructed settings. The understanding at the second level belongs to the observing organizational researcher. This understanding is the researcher's reading or interpretation of the first-level, common sense understanding. The concepts that the researcher may find helpful in the development of the second-level understanding are the postulate of subjective interpretation. The third level understanding belongs also to the organizational researcher. This understanding is one that the researcher creates and tests in order to explain the empirical reality that he or she is investigating. This explanation, which is also called scientific theory, is made up of constructs that belong exclusively to the observing researcher (as opposed to the observed human subjects). The explanation consists of formal propositions that typically posit the existence of unobservable entitites (like social structures). The theoretical explanation at the third level is different from both the common-sense understanding located at the first level and the interpretation of the common-sense understanding located at the second level. In addition, the theoretical explanation located at the third level must obey the same rules of formal logic and controlled empirical testing that apply to scientific explanations in general.
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These formal and experimental rules neither bear relevance to nor have application at the first two levels."

25. Lee summarizes as follows: "The subjective understanding provides the basis on which to develop the interpretive understanding. (arrow 1). The procedures that the organizational researcher may utilize to develop the interpretive understanding from the subjective understanding include (but are not limited to) those of phenomenological sociology, hermeneutics, and ethnography. To test the validity of the resulting interpretive understanding, the researcher may refer back to the subjective understanding (arrow 2), accomplishing this, for example, in the ways described by Kuhn, Taylor, Geertz and Sanday. ............ The procedures of the interpretive approach are fully recognized and incorporated into the proposed framework, as embodied in arrow 1 and arrow 2. The interpretive understanding, once judged to be valid, may then provide the basis on which to develop the positivist understanding (arrow 3)."
The interpretive understanding

1

2

3

4

The subjective understanding

6

5

The positivist understanding

Source: (Lee 1991)

Figure 2 Framework of approaches to organizational research

26. This thesis can best be positioned in the fields of subjective understanding and interpretive understanding. First the narrations of the respondents are collected and reported. Then the researcher has described and summarized the subjective understanding of the respondents. Only part of the narrative reports have been reviewed by the respondents. However, for practical reasons this had to be abandoned. The narratives were analyzed and decomposed in 39 case descriptions. The case description was conducted with the aid of the
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structure of good narratives, provided by Gergen. Each case description has provided a challenge and a solution, as perceived by the respondent. Some were quite similar and were joint to describe a specific governance object. Per object the most common and substantial insights were identified. This test of the value of these insights was done by the researcher by interpretation. Critical for this approach was that the researcher had the position and the experience to understand the situation for each respondent, because as a consultant he has gained much experience in the environment of the respondents.

Methodological Approach

27. Galliers {Galliers 1992} provided a useful set of research approaches. He has reviewed the range of approaches that have been declared suitable in the field of information systems. There are two reasons why it is appropriate to consider these also for the approaches in this investigation. First of all the topic “internal governance” originates from the adoption of information technology and the increasing complexity of organizational life. The other reason is that the proposed approaches are linked to the same objects as investigated in this thesis: society, organization / group, individual and technology. Galliers {Galliers 1992} lists ten different approaches: theorem proof, laboratory experiment, field experiment, case study, survey, forecasting and futures research, simulation and game/role playing, subjective argumentative, descriptive / interpretive (including
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reviews) and action research. What have been the considerations to either exclude or to select an approach? The arguments are based on the discussion Galliers has summarized in his article on Information System research Approaches.

- Case study: this approach has been a premise from the start of this investigation. A case study captures the reality in considerably greater detail (and the analysis of a greater number of variables) than is possible with any of the other approaches. The idea was that the researcher – having a full time consulting job – could expect to get easy access to case situations that would fit the investigation well. However, in practice it appeared quite difficult. First of all the researcher is only contracted to a project for limited periods, and it would be difficult to spend time at the case study location after having transferred to another client. There would be insufficient time to conduct a case study. Another practical reason would probably become the distance between the location of other consulting assignments and the location of the case. For mainly practical reasons this approach has been abandoned.

- Survey: ‘are essentially snapshots of practices, situations or views at a particular point in time, undertaken using questionnaires or (structured) interviews, from which inferences may be made’. The researcher had developed a questionnaire with questions on each topic and related factors included in the interaction
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management model. However, he considered that this would give too much bias to the respondents. By mentioning the factors beforehand respondents may give biased answers. In two ways the answers could be biased: the researcher may unavoidably use the concepts that relate to the factors. Secondly, the respondent may be influenced by the wording. Since the research goal is to understand the present governance practice, the researcher preferred to observe the situation and identify the factors that managers perceive as critical. He has decided to do this with a rather open interview form.

- Subjective/argumentative research: ‘creative MIS research is based more on opinion and speculation than on observation’. Its strength lies in the creation of new ideas and insights. However, it is highly subjective by nature. Although it could be applied because of the experience and environment of the consultant, it has not been chosen because the researcher wants to build the insights based on what is observed in the real world, not on speculation.

- Descriptive / Interpretive research: according to Galliers {Galliers 1992} the argument for this approach goes like this ... ‘all we can ever know are phenomena, since there is no such notion as a ‘thing in itself’. However, once we have understood phenomena correctly, we know all that there is to be known. Phenomena are the essence of our experience. Essences are
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grasped intuitively (i.e. they are not verified empirically), since the proof of an essence is its self-evidence'. And Galliers continues .... 'The strength of this type of research lies in its ability to represent reality following an in-depth self-validating process in which presuppositions are continually questioned and are our understanding of the phenomena under study.' And then he notes that the weaknesses relate to the skill of the phenomenologist and his ability to identify biases and unheralded assumptions.

28. The approach adopted for this thesis can be described best as the descriptive/interpretive approach. It supports best the researcher's personal motivation and the results he expects. The weakness of this research approach - "skill of the phenomenologist and his ability to identify biases and unheralded assumptions" - is at least partly overcome due to the personal profile of the researcher. As discussed above the researcher is knowledgeable in the field. Moreover he has conducted inductive analysis several times during his career: based on literature research and field surveys, he identifies the critical concepts and collects data related to specific concepts. Then he builds his opinion around this information. This opinion results in a validated statement based on the collected data. The interpretation of the result is the critical part of this method, for which there is reasonable evidence that this fits the researcher. This shows that the
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profile of the researcher renders the interpretive approach as appropriate.

29. The ingredients for proper field work have now been identified. The research goal, the profile of the researcher, the opportunities and constraints that determine the feasibility, the research approach and the primary sources of data. How should the researcher then collect the data?

30. The data should reflect the real world as much as possible. This cannot be done through the construction of a Survey as argued above. So it was decided to conduct very open interviews with the following introduction: given the context – digital technology, network organizations, relationships, interaction – to ask for the positive experience with the given contextual perspective as a guiding focus; respondents started to talk about their own experiences, and the researcher only asked for more specific information if the respondent referred to one of the factors in the theoretical model; he also pursued in-depth information if he identified a latent topic, just for clarification; furthermore he specifically asked for examples that demonstrated the case. The respondents were briefed that the only thing that mattered during the interview was their own perception. There was no theoretical right or wrong. Only their own perception counted. Moreover most of the respondents reflected very openly on their own career. Since most of the interviews were conducted by phone the first sight or
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non-verbal effect of personalities between respondent and interviewer was also practically eliminated.

Approach Justification

*Thesis Approach*

31. The considerations in the preceding paragraphs have resulted in the following research strategy: 1) project experience → 2) research question definition → 3) literature review → 4) model building → 5) model refinement with field data → 6) model testing with CIO group → 7) model refinement → 8) model testing with CIO group → 9) Final discussion and analysis. The project experience – a project conducted for a client on business architecture in a networked organization – has been the trigger. Then I have formulated the research question: In Search of Governance. Based on secondary resources the structure of relationships and the development of a networked society has been analyzed. Within this context a theoretical model has been developed. Academic insights have been identified during the literature study. The refinement took place during the analysis of the narratives of 27 respondents. Insights have been linked to governance objects which were identified in the narratives. Then the frequency that text units provided support for an insight was calculated and related to the overall frequency in the 39 cases. When this frequency exceeded 50% and the number of overall occurrences of this insight in case was sufficient, the insight was qualified as a substantial insight. Per object
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a common practice has been derived and discussed. The analysis has been supported by means of N6 software that facilitates qualitative research. The model testing has been carried out within the working group of CIOs. The results of all these steps form the basis for the final discussion on the topic of internal governance practice.

Qualitative Research Criteria

32. The choice for this approach has been the result of a mixture of feasibility, appropriateness for the topic and personal preference. Therefore it should also be tested with criteria provided by academics not involved in this study. Two perspectives will be discussed: testing against generic criteria of qualitative research applied by other researchers based on Weick {Weick 1995}; and a test of the interview methodology{Berings 2006}. Weick has provided a set of criteria for testing the validity of qualitative research in his report on the research of sensemaking organizations. This research is very close to the type of investigation undertaken in this project and Weick has analyzed > 20 investigations to show that they share 10 similar characteristics. He describes as a main characteristic of organizational sensemaking that it “....is the ongoing pressure to develop generic subjectivity in the interest of premise control and interchangeability of people. Generic subjectivity is developed through processes of arguing, expecting, committing, and manipulating. These four processes produce roles that create interchangeability, and they produce arguments, expectations, justifications, and objects that become common premises for action. These same four processes dominate the more intimate inter-subjective
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interactions where innovations in arguments, expectations, justification, and objects are formed." Weick, K.E. Sensemaking in Organizations, p 170 {Weick 1995}

33. Both his research and the topic of this thesis are concerned to grasp the real world and to influence the course of action in a desired direction through influencing social processes and individuals. In the model of this thesis the object of research is similar: relationships, interaction, group behavior, individual beliefs. However, one other aspect has been included: structure and its interdependency with other aspects. Therefore his discussion of the research strategy is as relevant for this thesis as it is for his study. The following commonalities have been found by Weick in the 20 other research projects:

a) "Investigators make an effort to preserve action that is situated in context. Where the context is simulated, attempts are made to retain the richness of the referent setting. Both approaches are complemented by explanations that imply person-situation interactions or transactions.

b) Observers rely less on researcher-specified measures and more on what participants say and do in response to minimal prodding and prestructuring. Participants' texts are central.

c) Observers work in close rather than from the armchair.

d) Participants, rather than the observers, define the work environment.

e) Findings are described in terms of patterns rather than hypotheses.

f) Explanations are tested as much against common sense and plausibility .... As against a priori theories.

g) Density of information and vividness of meaning are as crucial as are precision and replicability.

h) There tends to be intensive examination of a small number of cases rather than selective examination of a large number of cases, under the assumption that person-situation interactions tend to be similar across classes of people and situations.
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i) Sensemaking tends to be especially visible in the settings observed. Settings are chosen more for their access to the phenomenon than for their representative value.

j) For want of a better phrase, in all of these cases observers mobilize a set of methodological tactics that enables them to deal with meanings rather than frequency counts. Methodologies are assembled in the service of gaining access to the situated generation of some kind of explanation for unexpected interruptions.

34. Weick further argues that these commonalities should not be read as prescriptive, but rather suggest part of the mindset for methodology that tends to be associated with investigations in sensemaking. How does the Research Approach in this thesis comply with these commonalities? In this investigation clearly an effort has been made to preserve the action situated in its context. This is achieved through capturing the respondent’s narration with a minimum of interpretation by the researcher (b). Furthermore, my own practice as a consultant in the field of the CIO’s task environment enriches the understanding and interpretation of the context (c). For 20 years I have been in the middle of this task environment. The benefit is that during the interview, it is easier to understand the situation of the respondent, and to focus on the real issues instead of asking for clarification due to lack of familiarity.

35. Another way to enrich the data is to add the respondent’s paradigm as regards network organizations and governance. This is done by presenting 13 propositions to the respondent and letting him score. The approach is fully compliant with (b). At first the Survey included open and closed questions, but this was abandoned because it would impose too much the paradigm of the researcher. The
interviewed manager is now completely free to tell about his experiences and insights in governance, in a sequence he chooses himself (d). The researcher’s role has been reduced to asking for clarification only. The interviews took between 90 and 120 minutes, of which the respondent talked for about 80-90% of the time.

36. The interview methodology is similar to the fourth characteristic. No, or only very little, direction was given during the interview (d). After having analyzed the interview reports of the first group the researcher concluded that respondents reported on most of the insights derived from literature. Based on this analysis a CIO common practice was identified and now the results can be tested. The results have also been described as patterns of approaches per governance object. (e)

37. Another commonality is that density and vividness of information is as important as precision and replicability (g). In some cases a change in formulation or definition, or attribution of another meaning are the result. In this thesis a relatively large number of case situations have been included by the respondents, resulting in 39 case situations. The visibility was determined by the settings (context) that were observed by the respondent. Settings were not chosen because of the representation of the case or one of the issues in the topic of governance. Settings were purely observed by the respondents themselves, in reflection of their own practice. As regards the tools, the software N6 for qualitative research has been
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used in this investigation. The software enables the drawing of statistics as well as the making of cross views of the collected data. The frequency of occurrence as well as the measurement of the paradigm will be reported in order to support the qualitative analysis with facts.

38. Research methodology is important in order to demonstrate the soundness of the conclusions. The ten commonalities identified by Weick seem also to be applicable to the approach followed in this thesis. Based on the analysis of compliance with these commonalities this thesis also shows it adheres to academic practice appropriate to this research topic.

Test of methodological practice

39. Another study on the methodological practices in investigations is presented by Berings {Berings 2006} in her dissertation on on-the-job learning. She focuses on contemporary research and presents an overview of methodological practices. It shows that the implicit nature of on-the-job learning processes limits the variety in instruments used for mapping the process of the on-the-job learning. Why is this study relevant for this thesis?

40. According to Berings the basic idea of on-the-job learning is “..... that it occurs outside the context of educational goals, and does not follow a formally organized learning program or event. It happens within the context of day-to-day learning and development, and is
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therefore often spontaneous and integrated with work activities. ...... *On-the-job learning is viewed as implicit or explicit mental and/or overt activities and processes, embedded in working and work-related performance, leading to relatively permanent changes in knowledge, attitudes or skills.....* Learning outcomes may vary from change, reinforcement, refinement, and extension to learning something new......” {Berings 2006} p68. This topic is quite analogous with governance. Both investigate the subject in the day-to-day context. Both investigate a subject that is often spontaneous and integrated with work activities. Both have an impact on attitudes and skills. Both deal with the topic of Learning. In this thesis Learning has been identified as a key factor in governance practice, especially the Learning on-the-job. Therefore this analysis of methodologies may have some relevant conclusions for this thesis.

41. Berings has extensively searched for methodological practices in contemporary research into on-the-job learning. A four step approach has been followed: at random review of research projects has been the basis for exploration; then descriptions have been identified under which on-the-job learning could be categorized; then a hand search was carried out in six major journals; finally an examination of reference lists of articles was conducted to identify additional relevant sources. This provided the researchers with a number of alternatives divided over two categories: questionnaires and interviews. Different practices have been identified within each
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category: 6 questionnaire practices and 8 interview instruments. The main conclusion in respect of the variety of methodological practices used in contemporary research into on-the-job training is that only questionnaires and interview guides are used to map learning processes.

<table>
<thead>
<tr>
<th>Methodological tool</th>
<th>Questionnaire for 13 propositions</th>
<th>Interview maximized reflection on the personal working practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Critical reflection on respondent's governance practice</td>
<td>Narrative (life and work history) interviews</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Operationalization of Governance</th>
<th>Respondents are requested to comment on their day-to-day governance practice. Operationalization takes place through relating these narratives to the model domains. Frequency of factors included in the model. Possibly script description per situation and identification of patterns.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Goal</td>
<td>Explore whether a relation exists between the prevailing governance paradigm and the governance practice</td>
<td>Explore the construction of governance practice through the interpretation of experience and reflection of practitioners on more than 15 years experience as a manager.</td>
</tr>
<tr>
<td>Researcher's role</td>
<td>Constructs the conceptual model and collects information via interviews</td>
<td>Reflexivist: the interviews offer time and space for reflection both for the interviewees and the researcher who are both part of similar experience.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality and rigor</th>
<th>Instrument description</th>
<th>Literature study and opposing propositions included to validate the respondents perception</th>
<th>Narrative (life and work history) interviews to enrich the literature study and the questionnaire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Validity</td>
<td>Two distinct groups are compared. Respondents are from many different economic sectors.</td>
<td>Generalizability: 2 distinct groups - only Dutch respondents versus Europeans from 6 different countries - at least 6 different sectors included. From research, to entrepreneur start up, to political domain to multinational in the reference group - both small as well as large organizations Interpretive: a narrative was created based on the</td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Reliability</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectivity</td>
<td>Items are as much as possible formulated in an objective way</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Framework should be offered to the respondents themselves to test whether it facilitates the use in practice, analysis and reflection of experiences</td>
</tr>
<tr>
<td>Authenticity</td>
<td>Source: {Berings 2006}</td>
</tr>
</tbody>
</table>

Figure 3 Comparison of methodological tools for governance research

42. In this thesis a combination of Questionnaire and Interview guide has been used. The questionnaire has been used to reflect on the Working Behavior of the respondent. The goal of that questionnaire is to understand which paradigm the respondent prevails: the control or stewardship paradigm. It included 13 propositions which could be scored by the respondents in accordance with his agreement. This has been included to understand whether there is difference in governance paradigm between the business managers and CIOs. Moreover a brief introduction to the interview has been included to ensure that the narration would remain on the topic. Berings' analysis comments on the differences per aspect of each instrument: making on-the-job learning operational, research goal,
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the researcher’s role, and the quality and rigor. This framework has been adopted to clarify the methodology used in this thesis. (see table) Strong points are the diversity due to the distribution of respondents over six different countries and the reference of a second groups to verify or falsify. These enhance validity. Also the possibility to evaluate the results with the CIO target group is a convincing part of this research. The findings of this research – either rejecting or accepting the results – could be a good starting point for a further investigation.

Summary
43. First has been discussed why a research project for internal governance is justified. Then the personal motivation has been highlighted. The researcher does not want to prove anything, but is focused on the development of new insights into the field of governance. He is particularly interested in transferring knowledge from experienced managers to less experienced or successful managers, or from one type of manager to another. He makes this operational by composing /constructing a framework that consists of one model and three tables. The model is not a prescriptive model, but a model that facilitates discussion between peers or reflects on practice. The last phase of research is a test of the usefulness of the framework for at least one group of respondents. This is a group that historically struggles most with the topic.
44. The feasibility of the research is positive. Only the amount of time and the financial resources are very limited. Secondary and primary resources are abundantly available. The primary resources - respondents for the survey - are available due to the researcher's acquaintance with the sector.

45. This project complies with most of the criteria identified in other qualitative research projects, as discussed by Weick and another project by Beringer. To conduct the research two tools have been used the questionnaire and the interview. The questionnaire provides a scale to capture the degree of prevalence of two opposing paradigms. The interview resembles most the In depth interview or Narrative interview.
CHAPTER 3 LITERATURE REVIEW

Introduction

1. The aim of this chapter is the identification of factors relevant to governance practice in digital organizations. The review is a journey in time. A discovery of the origin of insights into what happens in the real world ... of a manager. Some academics at the beginning of the 20th century abstracted from reality to reduce the complexity of the real world, and sometimes because they believed that some factors were more important than others (e.g. Hobbes's problem of order that certain human motivations keep others under control). Others criticized the isolated perspectives of theories. Some, however, realized that the real world is a mixture of all these factors and tried to build a more comprehensive understanding of its ingredients. That is the approach I have also chosen in this thesis.

2. This approach is certainly not the easiest one, but if it succeeds it will probably be one that is closest to day-to-day practice. As indicated in the research questions during this review, we will look for insights that have a value in practice. This may result in a model that visualizes the for management practice potential. The challenge we will have during this approach is two-fold. It is very likely that we will find many factors, which are akin to each other, but are derived from different perspectives. Secondly once
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found, the challenge is to communicate these factors comprehensively.

3. Focus is given in two ways. First the literature is divided into four different strands. The discussion on the unit of analysis for the governance of economic exchange: transaction or interaction. Then the questions how to cope with increasingly turbulent environments are discussed, for which the contingency theory and architecture thinking are analysed. Thirdly the added value of systems thinking for management practice has been discussed. This is expected to provide a better understanding of the dynamics of social systems. And, finally the social theories of Giddens {Giddens 1984} and Gergen {Gergen 1994} have been discussed, because these are closest to day-to-day reality. They discuss how social evolve and development. Their theories also provide an integrative frame for all strands.

4. The second way to remain focused when studying these strands, is to review all the four strands from the perspective of governance. This resulted in the identification of different domains that provided a way to group factors and insights around the governance of relationships. In a simple way the model describes that interaction is the major object of governance. Once interactions are managed effectively, the outcome is close to expectations. However, contextual factors may disturb the dynamics, and cause deviation. This has to be managed as well.
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Therefore managers need ways to intervene. Three domains of intervention have been identified: leadership, dependency and learning. During interaction, assumptions, history and experiences from participants come together. These influences are considered from three perspectives: individual, structure and group.

Source: this thesis

5. Although these domains are separated during the analysis, for the understanding of reality these sub-domains can never be considered in isolation. They always form a reality with its distinct properties, as the mixture of molecules form a substance. The Contextual domain groups factors that are relevant for the situatedness of relationships. Relevant means that it has some
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impact on the shape or operations of the relationship. Last but not least the performance domain is included. Here the factors are grouped that tell something about the quality aspects of the objectives and the goals for the governance of the relationship. \{Hendrickx 2002\}{Hendrickx 2003}

6. Adam Smith was the first economist to investigate the exchange relationships, Coase and Williamson \{Coase 1937\}{Williamson, Oliver E. 1979\} have subsequently developed the transaction cost theory to develop a better understanding of the coordination of exchange relationships, and Malone and Clemons have investigated the impact of IT on the coordination of exchange relations. \{Malone 1994\} \{Malone 1987\} \{Clemons 1992\}

7. Although the transaction cost view may be necessary to understand wealth creation, it is not sufficient. The transaction cost theory emphasizes the economic perspective and focuses on efficiency. What is more efficient: coordination by pricing mechanism or by ownership? Some academics have demonstrated that this theory over-emphasizes the importance of authority and under-emphasizes the social factor. Granovetter \{Granovetter 1985\} has done this for the social factor and Ghoshal \{Ghoshal 1996\} has demonstrated how the over-estimation of the importance of authority can lead to disappointing outcomes. Granovetter and Ghoshal propose therefore to include the social factor in the theory of coordination. This brings the real world
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again more to the fore. Powell has developed a more comprehensive view which integrates the different perspectives into one. He has developed a view with three governance mechanisms instead of two.

8. Since Coase and Williamson have a perspective of the economic man with rational decisions, Simon should be included with his behavioral approach. He has published a more behavioral view on organizational approaches and he discusses the perspectives of rational man and administrative man.
CHAPTER 3.1 COORDINATION AND THE STRUCTURE OF RELATIONSHIPS

The behavioral approach

Introduction

1. Herbert Simon has approached the concepts of efficiency and coordination differently from Williamson and Coase. {Simon 1961} Coase has analyzed the nature of the firm, and concludes that the Firm is a coordination mechanism. Williamson has elaborated a framework to systematically prepare decisions related to the boundary of the Firm. Instead of two – firm and market – he identifies four types of governance structure. Simon argues that the effectiveness of the structures is not a natural thing. Disturbances occur and actors make choices. Economic man can make the right decisions due to fully rational thinking, but administrative man has his limitations. How can managers deal with these limitations?

2. Simon chooses a perspective of decision-making within organizations. {Simon 1961} In his book the term organization .... "refers to the complex pattern of communications and other relations in a group of human beings. This pattern provides to each member of the group much of the information, assumptions, goals, and attitudes that enter into his decision, and provides him also with a set of stable and comprehensible expectations as to what the other members of the group are doing and how they will react to what he says and does. The sociologist calls this pattern a 'role system'; for most of us
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it is more familiarly known as an ‘organization’." ([Simon 1961], p16) He considers the organization as the goal environment. In order to make the goal of the larger organization comply with individual needs, rationality in decision-making is needed.

Rationality

3. Simon has examined the notion of rationality and in particular what is meant by "selection of effective means". Rationality is the decision-making by individuals in line with the objectives of the larger organization. These decisions are made with the complete knowledge of alternatives, the insight into the impact of specific choices on the course of action and the possibility to evaluate the alternatives. However, rationality is limited, he argues. At one extreme is economic man and at the other administrative man.

4. Economists assume complete rationality. According to Simon they talk about economic man as a purely rational man. He has a complete and consistent system of preferences that allows him always to choose among the alternatives open to him; he is always completely aware of what these alternatives are; there are no limits to the complexity of the computations he can perform, in order to determine which alternatives are best; probability calculations are neither frightening nor mysterious to him.

5. However, rationality has its limitations. Therefore he introduces administrative man, who is intendedly but bounded rational. He
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continues that both economic and administrative man strive for efficiency. However, economic man is assumed to have complete rationality, while administrative man is limited by three factors: human physiology, his values and conceptions and the knowledge relevant for the job.

6. The latter two depend on the organizational environment and the effectiveness of coordination within the organization. Simon has emphasized the relevance of individual beliefs, because he assumes that it is more important to study the premises than the decision itself. He perceives the decision-making process as a process of human choice. A process of "drawing conclusions from premises". Since individual and group values determine what is rational, communication is needed when it concerns decisions about the operations. And the right decisions are critical to accomplish the goals of the organization. How to ensure that the right decisions are made? That is the added value of the organization.

Governance mechanisms

7. There are several mechanisms to influence individual or group behavior: reorientation of premises and values towards the goals of the larger organization; communication to align the concepts and values of individuals with larger groups; means-ends hierarchy for governance of decision-making. Simon further concludes about decision-making that ...."The deliberate control of the environment of decision permits not only the integration of choice, but its socialization as well.

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Social institutions may be viewed as regularizations of the behavior of individuals through subjection of their behavior to stimulus-patterns socially imposed on them. It is in these patterns that an understanding of the meaning and function of organization is to be found.” Thus Simon recognizes that the social institution is a critical part of governance structure.

8. Furthermore he concentrates on dealing with rational behavior, but also with behavior of good administration. Good administration is behavior that is adapted to its ends. The decision-making process of decisions is hence dealing with means and ends. Goals may be dependent for their force on other more distant ends. This leads to a hierarchy of goals, each level being the means to achieve the goal at a the higher level or being the goal for the lower level. The means-end hierarchy is seldom an integrated, completely connected chain, both for the organization and the individual. Sometimes lack of integration is due to refusal of the policy-making body to decide a “hot” issue of policy. Sometimes the means-ends relations themselves are obscure. Both organizations and individuals fail to attain complete integration of their behavior. What remains of rationality is the incomplete, sometimes inconsistent, hierarchy of means-ends.

9. Simon identifies several limitations of means-ends hierarchy. Ends are often incompletely or incorrectly stated. Wisdom is needed to decide how the end can be reached. This wisdom of choice requires the comparison of alternative means in terms of
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respective ends to which they will lead. A complete separation of means and ends is usually impossible. Alternative means are not usually valuational neutral.\textsuperscript{5} The means-ends terminology tends to obscure the role of the time element in decision-making. Short term objectives may cause disastrous consequences for the future. Also some decisions are irrevocable, like fixed cost for instance. The decision for fixed cost will influence the decisions in future. It also counts for a certain inertia in the adjustments to new situations. Means-ends is useful, but only if applied with care.

Discussion

10. Simon argues that economists assume rationality. However, rationality has its limitations. Therefore he proposes the concept of administrative man. Administrative man is aware of bounded rationality. Choice and existence of alternatives raise the need for alignment of the organization and the individual. Also the dependency between goals in a means-ends hierarchy demands governance. Internal coordination is required to meet organizational goals. Simon considers the social institution as critical for internal governance. Internal coordination should therefore focus on the re-orientation of premises and alignment of concepts and values. Simon sees efficiency as one of the driving forces for both economic and administrative man.

\textsuperscript{5}Means-ends analysis is practised by business architects of Capgemini as a method for priority setting. It is an effective way to support the awareness of priorities and strategic principles, and support decision-making on a preferred organizational structure.
11. Simon assumes that the economic perspective should be considered as the most important outcome. Although systems thinking (see Chapter 3.3) has proposed to look at the outcome from several perspectives at the same time, it has also been considered by authors as the most important factor. However, over-emphasizing the economic perspective leads to undesired effects. (see Chapter 1)

12. To achieve efficiency, he argues, a manager has three tools: communication, reorienting beliefs and values, means-end hierarchy. In the proposed framework this would position these factors as follows: communication relates to leadership, individuals, the group and the transformational frame; bounded rationality relates to context, (in chapter four this is part of the transformational frame) and the individual; reorienting beliefs and values relates to learning, individuals and the group; means-ends hierarchy relates to dependency and structure (in chapter four this is part of the controllable frame). The governance model domains seem to fit well with the factors Simon has proposed.

Transaction Cost Approach

Nature of the firm

13. Williamson’s Transaction Cost Economics had the origin from an article of Coase in 1937. Coase analyzed the nature of the Firm, because this concept had been used by many academics. {Coase 1937} With this article he wanted to clarify the raison d'etre of the
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*firm.* He argued that the firm emerges due to costs that occur in the market when exchange takes place. Coase identified five categories of cost: discovering what the relevant prices are; the cost of negotiating and concluding a separate contract for each new transaction; avoiding risks with a long term contract, which states to a limited degree what is expected from the supplier; taking advantage of tax cost imposed by government; methods of price control are also a reason for cost. These costs are partly eliminated when the exchange parties cooperate within one firm.

14. All the separate contracts of transactions are substituted by one contract between the entrepreneur coordinator and the employee. It is assumed that the employee will follow his directions, of course within certain limits. According to Coase the entrepreneur may choose between transactions in the market place or within the Firm, and through the creation of the Firm the entrepreneur gives way to a more efficient transaction. With his article on the Nature of the Firm Coase provided in 1937 a purely economic perspective. Most of his arguments were based on economic reasoning: cost, risks and prices. However, he also recognized that non-rational motives may play a role in starting a Firm, but although they give way for a more extensive analysis, these were not elaborated in his article in 1937: being one's own master; desire not to be controlled, but to control. It took about 50 years
before this type of non-economic reasons were discussed, e.g. by Powell, Pfeffer, or Granovetter.

15. Coase argued that the only difference between firm and market is the coordination mechanism: economic planning and pricing mechanism respectively. In a market, marketing-cost for transactions occurs and the pricing mechanism directs resources to the production system. In a firm the owner has contracts with employees who provide services and carry out “exchange transactions” without individual contracts to direct resources to the production. The employee is committed to render his services within the agreement. The entrepreneur is merely interested in the fruits of his labor. The coordination by the entrepreneur gives direction to the use of resources in production. If there are two entrepreneurs involved, the direction of resources is coordinated by the pricing mechanism.

16. Since the owner has a choice to internalize transactions within the Firm, or to leave them across the firm’s boundary, the size of the firm is relevant. What is then the ideal size of the firm? This is relevant because the motive to internalize the activities is a governance problem. An entrepreneur has two alternative ways to combine two activities: with or without a change of operations. Several economic reasons have been identified by Coase to explain the size of the firm: cost of organizing, cost of marketing, the
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scope of activities an entrepreneur can handle without mistakes, and the effect on the price of production factors.

17. Coase has also briefly discussed the nature of the relationship within the context of a firm. He comments on the difference between an employer-employee relationship and a master-servant relationship. The latter is determined by the fact that the master may interfere in how the work is done by the servant. In an employer-employee relationship the contractor is merely interested in the fruits of the employee's labor, not in the method he does the work. Since this is close to how the real world is perceived, Coase argues that the concept of the firm is applicable in the real world. This is not a very convincing argument. However, the idea of introducing the link between the entrepreneur and the behavior of the agent as an aspect of governance is relevant. This will be discussed more extensively when we deal with social theories and governance, as discussed by Simon, Castells, Giddens, Barley, Granovetter and Powell.

18. The dependence of the firm on a variety of external factors in a large economic system is also recognized by Coase. He did not elaborate on this perspective, but many years later other academics have done so. {Galbraith 1973} {Lawrence 1977} {Pfeffer 1978} {Thompson 1967} These academics are included in the literature review to explain the influence of the external environment and technological development on the shape of organizations. This
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reflects the intervention that changes the inter-dependency of the different parts of the organization.

19. The fourth aspect he mentions is the dynamics of the economic system. Prices may change, resources may not be available. Events will change the course of action and the entrepreneur will react to them. The entrepreneur will start forecasting and operating through the pricing mechanism by making new contracts. The difference with a manager is that he merely reacts to price changes, re-arranging the factors of production under control. That the businessman normally combines both functions - entrepreneur and manager - is an obvious result of the marketing costs which were discussed above. This illustrates the inter-dependency between forecasting and organizing factors of production, which causes some dynamic aspects for governance. Therefore an investigation of factors brought forward by a systems approach is justified as well. Therefore authors as Forrester, Ackoff, Checkland, Gharajedaghi, Senge and Sterman are also included in this review.

20. In 1998 - sixty years later - Coase {Coase 1998} confirmed his view that the object of governance is the coordination mechanism of economic activities. First he comments on the theory of Adam Smith that the lower the cost for coordination, the more specialization there will be. However, he adds more ..... “the costs of exchange depend on the institutions of a country: its legal system, its political
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system, its social system, its educational system, its culture, and so on. In effect it is the institutions that govern the performance of an economy, and it is this that gives the "new institutional economics" its importance for economists.” He argues in the same article that it is in fact the discovery of all factors – legal, social, cultural and technological – that is required to understand the economic system and its complicated set of interrelationships. Therefore attention will be paid to what the context / the frame / the institution or structuration of the environment of societal activity.

21. In short, Coase recognized the following critical factors for the governance of economic activities: institutional factors, the external relationships, the dynamics of economic systems, the structure of economic activities, the motivation of the employee and management.

Discussion

22. Coase analyzed the nature of the Firm because at that time there was a huge debate on the concept of the firm. He concluded that the Firm is a coordination mechanism to direct resources into economic activities, thus enhancing their efficiency. The Firm is an alternative for the “invisible hand” identified by Adam Smith: the price mechanism. Coase emphasized the economic factors. The marketing costs determine the choice of coordination mechanism. In the 30s he elaborated the concept of the firm from a purely economic perspective, although he was also aware of the
non-rational factors. Sixty years later he argued that institutional factors and human behavior also play a critical role in finding the right coordination mechanism.

23. Coase discussed also the importance of finding the right boundary of the firm. To assess the right boundary for the firm he discussed the relevance of the employer-employee relationship and dependence of external factors and dynamics. Sixty years later he also recognized that the impact of the institutions of society for the effectiveness of the hierarchy is high, e.g. law or social rules determine the conditions for the economic outcome.

24. Based on the insights of Coase the following factors can be identified: ownership - structure (later called the controllable frame); authority - structure (later called the controllable frame); coordination mechanism - structure (later called the controllable frame); motivation - individual; external institution - context; integration or combination - dependence and structure (later called the controllable frame). Overall he over-emphasizes the importance of economic and structural factors, and is aware of but only mentions factors such as leadership, individual behavior, group behavior and learning. Williamson has elaborated this biased economic perspective in the Transaction Cost Theory.
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Transaction cost economics

25. Williamson has built on Coase's theory which has had a significant impact on governance practice. {Ghoshal 1996} He has built a framework that aligns types of transaction and types of governance structure. His focus lies on the efficiency of transactions, and he assumes a rational decision-making as regards the boundaries of an organization based on the economics of transactions. {Williamson, Oliver E. 1979}

26. Three dimensions are critical for transactions: uncertainty, the frequency with which transactions recur, and the degree to which durable, transaction-specific investments are required to realize least cost supply. Based on these three dimensions Williamson has identified 6 different types of transactions based on the frequency with which transactions occur (one-time, occasional, recurrent) and investments (non-specific, mixed and idiosyncratic). Furthermore Williamson has made the following assumptions: suppliers tend to be in business on a continuing basis; potential suppliers for any given requirement are numerous; frequency refers to the buyer activity in the market; the investment dimension refers to the characteristics of investments made by suppliers.
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#### Figure 4 Types of Transactions

27. The one-time transaction hardly occurs. Hence Williamson has decided to construct a 2x3 matrix: between frequency and investment characteristics. Based on the types of transactions Williamson has further identified that specific governance structures fit with one or more of the transactions. The factors that play a role are: risk of opportunism; mechanisms to prevent opportunism; conflict resolution related to transactions; risk exposure; learning curve; mutual dependency; transaction

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Investment Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasional</td>
<td>Non-specific: Purchasing Standard Equipment</td>
</tr>
<tr>
<td></td>
<td>Mixed: Purchasing Customized Equipment</td>
</tr>
<tr>
<td></td>
<td>Idiosyncratic: Contracting a Plant</td>
</tr>
<tr>
<td>Recurrent</td>
<td>Purchasing Standard Material</td>
</tr>
<tr>
<td></td>
<td>Purchasing Customized Material</td>
</tr>
<tr>
<td></td>
<td>Site specific transfer of intermediate Product across successive stages</td>
</tr>
</tbody>
</table>

Source: [Williamson, Oliver E. 1979]
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organization. Based on these factors Williamson has defined four different types of governance structure: market governance, tri-lateral governance, bi-lateral governance and unified governance which he could relate to the different types of transaction.

28. Transaction cost economics has two behavioral assumptions: human beings are subject to bounded rationality and they may give in to opportunism. These assumptions indicate that the degree of efficiency has its limitations. First of all because all factors can never be included, and secondly because opportunistic behavior prevails over the interest of the organization. Williamson paraphrases Herbert Simon on bounded rationality as follows: ...."Bounded rationality needs to be distinguished from both hyperrationality and irrationality (........). Unlike "economic man", to whom hyperrationality is often attributed, 'organization man' is endowed with less powerful analytical and data-processing apparatus. Such limited competence does not, however, imply irrationality. Instead, although boundedly rational agents experience limits in formulating and solving complex problems and in processing (receiving, storing, retrieving, transmitting) information (........), they otherwise remain "intendedly rational"." {Williamson 1981} The consequences of these assumptions are that rational man will presumably seek improved information processing in his strive for more efficiency. The response to opportunism is to put contracts or rules within which the transaction takes place.
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Figure 5 Types of governance structures

29. Four types of governance structure have been identified by Williamson. Market governance applies to occasional and recurrent non-specific transactions. The legal framework or formal terms apply. The relationship between the two parties is without any dependency, and market alternatives for buying are ubiquitous. Mechanisms to prevent opportunism are the experience of the buyer, or (in)formal rating of the supplier. The Tri-lateral Governance Structure applies to mixed or idiosyncratic
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investments. It makes use of third party assistance through arbitration or performance control (e.g. an architect who supervises the construction of a building as an independent expert). The relation between the transaction parties is characterised by a high degree of inter-dependence, because there are relatively few market alternatives. The risk exposure is high, due to the low recoverability of the set-up cost.

30. Bi-lateral governance applies to mixed investments and recurrent transactions. The parties maintain autonomy, and have fewer and incompletely specialized human and physical assets. In the case of a conflict sustaining relationships is more important than unravelling it. Quality and quantity adjustments are preferred above price adjustments, because price adjustments are a zero-sum alternative. The change procedures or ways to resolve conflicts are elaborated at the outset. Unified Governance applies to specific recurrent transactions. Here integration is applied within the authority of the principal. A learning curve occurs, and increases the value of the relationship, but is hardly transferable. There is no change in the identity of the transaction over time.

31. The major alternative coordination mechanisms are price (market) or hierarchy. As explained above between those two extremes Williamson has elaborated two mixed governance structures in accordance with the type of transaction. Once the boundary has been determined, the related governance structure can be chosen.
In this thesis the different types of governance may be considered as the structure, and a set of contracts as the context for a specific interaction.

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>Non-specific</th>
<th>Mixed</th>
<th>Idiosyncratic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique</td>
<td>'Do it my way'</td>
<td>'Solve it'</td>
<td>Jointly solve and create new vision</td>
</tr>
<tr>
<td></td>
<td>'Do it for me'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occasional</td>
<td>Purchasing Standard Equipment</td>
<td>Purchasing Customized Equipment</td>
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<td>Purchasing Standard Material</td>
<td>Purchasing Customized Material</td>
<td>Site specific transfer of intermediate Product across successive stages</td>
</tr>
</tbody>
</table>

Source: (Williamson, Oliver E. 1979) extended with IT Professional Services transactions based on Capgemini collaborative practice, 2006

Figure 6 Types of Transactions

33. The Transaction Cost approach is based on three literature domains: economic, organizational and legal literature. Williamson proposes to use the transaction as the basic unit of
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analysis, since the choice of governance structure is pre-eminently an organizational theory issue. Furthermore he argues that transaction cost can be seen as the friction of the economic system, which has to be removed. Hence the transaction costs are the specific object to study. Williamson has limited himself to these dimensions, in spite of his awareness of other theories e.g. the organizational theory. {Williamson 1981} Below we will discuss his views on the relation between the transaction cost theory and the organizational theory.

34. An update of the transaction type may be needed for the digital world anno 2007. Many projects in the IT may be considered as a one-time buy. What kind of contracts should then be developed? Capgemini has elaborated four types of contract for professional services: co-create, shared, co-operative and transactional. These four types are organized on the following dimensions: relationship management; level of senior management involvement; scope and focus; specificity for deliverables; interaction team and client organization; risk/reward sharing. In my view this is a valuable extension to the Figure above.
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<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>INVESTMENT CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique</td>
<td>Non-specific</td>
</tr>
<tr>
<td></td>
<td>Governance</td>
</tr>
<tr>
<td>Occasional</td>
<td>Mixed</td>
</tr>
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<td></td>
<td>Governance</td>
</tr>
<tr>
<td>Recurrent</td>
<td>Idiosyncratic</td>
</tr>
<tr>
<td></td>
<td>Governance</td>
</tr>
</tbody>
</table>

Source: (Williamson, Oliver E. 1979) extended with IT Professional Services transactions based on Capp Gemini collaborative practice, 2006

Figure 7 Types of governance structures

35. One would expect trilateral governance for the mixed and idiosyncratic transactions in IT. However, they are organized in a bi-lateral fashion. I do not know yet why these are organized without a third party involved to check quality. Maybe it is because the sector is still not fully professionalized. Project types are either supervised by the supplier through multi-level engagement management. The project manager who takes care of the operational aspects, and the engagement manager who is
accountable for contract fulfilment. Only when serious conflicts arise might a third party get involved. Also the complexity of the deliverable description determines the way the relationship is organized. The better the description is, the less need for safeguarding or risk sharing. Although a more formal description framework is available, these are not yet sufficiently applied.

Transaction Cost Approach

36. Williamson {Williamson 1981} argues that organizational theory at that time was not sufficiently specific on the assessment of the organizational boundary. He proposes a more formal method, like the transaction cost approach. To underline this he compares the Transaction Cost Approach with other organizational theories. First he discusses the research of Thompson's Organization in Action (1967). There appear to be more similarities than differences between the two strands. Both agree that organizations must adapt effectively to uncertainty; both are interested in the problem of efficient boundaries; coordination costs determine the definition of the boundary as well as how the internal relationships are ordered in the hierarchy; both have a notion of "technical core"; both consider power as a reciprocal condition.

37. They differ, however, because Thompson does not seem to make any allowance for trade-offs between marketing and production cost. Neither does he identify the dimensions of transactions, as Williamson has done through dimensionalizing the asset
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specificity: site specificity, physical specificity and human specificity. Williamson claims that much of Thompson's proposition can be attuned with the transaction cost approach. Hence he considers these two approaches as complementary.

38. Williamson has also found similarities with the conclusions from the Survey of Laumann, Galaskiewicz and Marsden in 1978. {Williamson 1981} Laumann et al formulated support for the theory that besides the governance structure the continuity needs of the parties are also relevant. Furthermore they identified a need to distinguish between inter-organizational and intra-organizational boundaries. More continuity need is translated by Williamson into rules or mutual efforts during the transaction. In this respect the employment relation is also relevant. Network typology, tri-adic exchange relation and learning are other factors that play a role in the effectiveness of governance structures. Williamson has included some notion of the relevance of network modes, but he prefers the dyadic exchange relationship and does include learning dynamics only in relation to its impact on competition between market parties. Again with this comparison Williamson recognizes that some other factors may be included in the analysis to understand the outcome of economic activity.

39. As regards the research of Weick, Williamson does not seem to agree very much. Williamson prefers to see the transaction cost approach as a means to economize on bounded rationality. Simon
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gives way to this rational approach of organization design under conditions of bounded rationality. Weick, however, gives little attention to rational design. Finally Williamson comments on the power analysis by the Resource Dependency View of Pfeffer. He argues that although power has some relevance, it will always be subject to efficiency considerations..

Discussion

40. Williamson's perspective is focused on the optimization of the degree of efficiency. Two behavioral aspects have to be overwon: bounded rationality and opportunism. He seeks the resolution in information processing to overcome the bounded rationality, and in contracts and rules to overcome opportunism. He assumes an automatic response of behavior when contracts and rules are well imposed. In the next paragraph this assumption is contended.

41. When his theory is applied to IT Service Provisioning a completely different situation arises. One of the larger IT suppliers in the world has developed a way of working which is more often organized around social relations and trust in 'co-create' and 'shared' engagement contracts. This demonstrates that for a digital world the transaction cost theory is not adequate for some of transactions. Furthermore it is biased towards a one dimensional view of the individual (opportunistic) and ignores the factor group development and network effects. A third factor why the transaction cost theory may not be applicable in large parts of
economic life is the modularization of industries and the blurred boundaries of organizations. Dependencies become stronger and more numerous, which makes contracts and rules in dyadic relations less effective or more often leads to undesired effects. These arguments support the idea that besides market and hierarchy another type of governance mechanism exists.

42. Overall Williamson has provided a framework for a limited segment of transactions. This is supported by the extension of the matrix with one-time transaction types and related governance structure. At least for professional services the framework does not comply, and had to be extended. If we look at the factors that are recognized by other academics and which are not included in his analysis – network typology, learning dynamics, tri-adic, continuity needs – the Transaction Cost Approach is most applicable to non-specific transactions. However, for the other type of transactions questions arise. What is the impact of networks on opportunism? What is the impact of continuity needs on opportunism? What is the impact of learning (maybe: history of relationship) on opportunism? The basis seems to be too fragile for a robust theory. The remaining part of the chapter will investigate and discuss how his theory may be extended.

Empirical research on TCA

43. For this thesis we are not particularly interested in whether the theory is right or not right. The identification of factors that are
critical for governance is more important. Hence arguable factors for some academics, may still be valuable for this research. The criterium that will be used is whether sufficient evidence is to be found in the arguments. Rindfleisch and Heide provide a synthesis and integration of contributions and critiques up to 1997. {Rindfleisch 1997} This overview illustrates what factors are relevant according to the empirical studies on Transaction Cost Analysis. This study does not include the test of the assumptions of risk neutrality and transaction frequency due to the absence of empirical studies. The overview does test the assumptions of adaptation, performance evaluation and safeguarding costs. Rindfleisch describes the logic for these assumptions briefly. If the costs are low, then market governance is favoured. If they are high firms will favor internal organization.

44. Three types of a priori assumptions have been made about the properties of internal organizations and their ability to minimize transaction costs. Internal adaptation in behavior as well as output are more easily realized within organizations, as opposed to adaptation in the market place. It is easier to detect opportunism. Organizations can provide easier rewards that are long term in nature, such as job promotion opportunities. Thus the return of opportunism is reduced. Williamson further acknowledges that organizational culture and socialization processes may create convergent goals between parties and reduce opportunism ex ante.
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Furthermore Rindfleisch has noticed that the later TCA's approach has identified an array of formal and informal governance mechanisms, besides the market and hierarchy. This seems to comply with the strands that distinguish a third mode of governance structure to regulate behavior: network organization.

45. Rindfleisch has discussed the validity of the conceptual framework of the Transaction Cost Analysis. {Rindfleisch 1997} As regards the safeguarding from opportunism - when a firm deploys specific assets it may fear that its partner may opportunistically exploit these investments - the use of governance is confirmed, in general, as well as specifically the use of 'vertical integration'. However, in addition to vertical integration also quasi integration (shape a dependency), selection procedures (impose a controllable frame) and the development of relational norms have been used (share group value).

46. The second test concerns the adaptatation. An adaptation problem is created when a firm has difficulty in adapting the contractual agreement to changes in the external environment. Two antecedents of the adaptation problem are distinguished: bounded rationality and environmental uncertainty. Bounded rationality has not been tested in any study, hence Rindfleisch tested only for environmental uncertainty. Most studies indicate that environmental uncertainty either has no impact on vertical integration, or acts as a disincentive against integration.
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47. Finally the performance evaluation concept has been tested. A performance evaluation exists when a firm has problems evaluating the contractual compliance of its exchange supplier. It is broadly agreed that firms employ both vertical integration and hybrid governance structures as a means of easing the burden of performance evaluation.

Discussion

48. Williamson's conclusions are arguable. Based on the comparison with the other strands in organizational theory Williamson concludes that the Transaction Cost Approach is multidisciplinary: economic, organizational and legal. He also concludes that the Transaction cost Approach is more applicable to commercial organizations than to non-commercial organizations. Furthermore the level of analysis is semi-micro-analytic. Criticism argues that first of all Williamson over-emphasizes that efficiency always wins and is of a higher order than other performance criteria. However, he has demonstrated that a different set of factors have implications for the outcome of a transaction: network mode to which one belongs; power; learning; intermediate governance structures between the two governance structures.

49. Furthermore he distinguishes: Market Governance and Unified governance. Power plays a more important role in non-commercial organizations. History is important but not included in the transaction cost approach, which only focuses on rational
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decision-making, which has a biased focus on the structure of governance, not on its dynamics, history or learning effects. This justifies looking for criticism of the transaction cost approach.

50. Williamson has provided a purely rational economic perspective to determine the boundary of economic activity. He assumes that authority can do its work. Within the boundary the owner conducts systematic decision-making based on economic factors. Simon, however, recognizes that the organizational environment is critical to determining the effectiveness of operations. This is also supported by Williamson, since he mentions the organization and the network organization as relevant contextual factors for the interaction. He also argues that the organizational environment influences decisions, and that right decisions are critical to accomplishing goals. However, the theory of transaction costs has not integrated this view.
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<table>
<thead>
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<th><strong>Author</strong></th>
<th><strong>Perspective</strong></th>
<th><strong>Coordination</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Williamson, E</td>
<td>Economic</td>
<td>Market / Hierarchy</td>
</tr>
<tr>
<td>Granovetter, M</td>
<td>Social embeddedness of economic action</td>
<td>Both economic and Social context</td>
</tr>
<tr>
<td>Ghoshal, S.</td>
<td>Social embeddedness of economic action</td>
<td>Purpose</td>
</tr>
<tr>
<td>Clemons, E</td>
<td>Economic</td>
<td>Explicit coordination of transaction cost and risk</td>
</tr>
<tr>
<td>Powell, W.</td>
<td>Historical / Anthropological</td>
<td>Network of relationships</td>
</tr>
<tr>
<td>Achrol, R</td>
<td>Social perspective</td>
<td>Network of relationships</td>
</tr>
</tbody>
</table>

Source: This thesis

Figure 8 Overview of author perspectives

51. Williamson has developed a purely economic perspective of the transaction assuming that economic man makes rational decisions. Simon has demonstrated that the transaction type and its related governance structure together serve as a context for the boundedly rational administrative man in decision-making. The difference with Williamson is that he assumes that economic man focuses on ‘maximizing’ and that administrative man focuses on ‘satisfying’. Also the perception of the added value of an organization is
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different. Williamson considers the Firm as a resolution for a malfunctioning market, and Simon perceives the organization as a psychological environment for effective choices of individuals.

52. Williamson has proposed the resolution of bounded rationality through the internalization of transactions. When internalized in the Firm, there is no need for anticipation in a contract negotiation, since within the ownership boundary unexpected contingencies can be resolved within its own governance structure. Granovetter, however, argues that the structure of personal and network relations are more important than the organizational structure. On the other hand the structure may be very good, but if people do not understand how to let it work, then performance will be low as well. In the next paragraphs different views will be studied that focus on the relational aspects in organizations.

53. This discussion has demonstrated that the transaction cost theory in itself provides an approach to resolving issues in a specific way, but is not adequate as general governance practice. Social and relational mechanisms are largely underestimated and excluded. Hence further investigation is needed to provide a framework for governance. It should provide more insights into contextual dependence, individual and group behavior (including network organizations) and learning aspects. These are aspects which have been recognized by Simon, Coase and Williamson, but not
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elaborated. First the critique of their approach will be discussed. It is expected that these will provide further argumentation and alternative views to complement it.

TCA Critics and extensions

54. The same type of argument on Transaction Cost Approach can be found with Ghoshal and Moran. {Ghoshal 1996} They express their concern about the influence the prescriptions of the Transaction Cost Theory have on practitioners. They argue that it is a real concern because the assumptions and logic on which it is grounded are wrong. Its raison d'être of organizations is quite negative. Organizations exist due to market failure, instead of attributing unique advantages to organizations for governing certain kinds of economic activities, through a logic that is very different from that of a market. Ghoshal and Moran oppose fundamentally the logic and assumptions that Williamson made. Besides their critique, attention will be paid to the sources of the 'organizational advantage' they have identified.

55. According to Ghoshal and Moran two assumptions need particular attention in the critique. First of all they argue that the assumption of opportunism can become "a self-fulfilling prophecy whereby opportunistic behavior will increase with sanctions and incentives imposed to curtail it. Thus a need is created for even stronger and more elaborate sanctions and incentives. Caught in such a vicious circle, "hierarchies" ....... would over time lose their raison d'être." {Ghoshal 1996} p18. He
based this finding on extensive analysis and demonstrated this with a dynamic model of opportunism, in which he distinguished opportunism as attitude from opportunism as behavior.

56. The second contended assumption of Williamson is that one should prefer rational control based on information and formal administrative mechanisms ({Ghoshal 1996} p25), as opposed to social control based on people, their preferences, and the use of informal mechanisms. Furthermore Ghoshal and Moran argue that "..... the need for guarantees against the intrusion of ...... opportunists..... will severely restrict the viability of alternative social controls and will induce to turn to rational controls." Finally they argue that purpose plays the role in organizations that price plays in markets. Purpose is – as emphasized by Selznick according to Ghoshal and Moran – to create such a context that guides the evolutionary process, whereby fragile organizations ...... are infused with values and transformed into responsive and adaptive institutions. They conclude that it is purpose that provides the ultimate source of an organization's advantage over markets. And that should therefore lie at the core of the theory. ({Ghoshal 1996} p37)

57. After the critique of these key assumptions of Williamson, Ghoshal and Moran propose in their convincing article to extend the theory as elaborated by Williamson. They argue that especially the contributions of Ouchi (1980) on social control are important. Furthermore they suggest to include Granovetter (1985) with a
compelling argument for the need to consider social relations, in which economic behavior is embedded; and Williamson's own ideas about 'atmosphere' (1975) and 'dignitary values' should be included. Since the acceptance of embeddedness of economic action in social relations is key for the validity of the other arguments, we will discuss the argument of Granovetter first. \{Granovetter 1985\} The ideas of 'atmosphere' are dealt with in the review of Herbert Simon's contribution in 1961 when he described organizational behavior.

Discussion

58. The article of Ghoshal and Moran is of special importance in this thesis because they criticized the Transaction Cost Theory for its core assumptions. Furthermore it has convincingly demonstrated that opportunism is part of delicate individual and social dynamics and may result, contrary to its desired effect, in attenuating opportunism if used in a biased way - which assumes opportunism. Therefore more attention should be paid to social theory and the embeddedness view of economic action. In this literature review, these theories are the bridge between the economic view - dealt with in this chapter - and the dynamic comprehensive social view of Giddens and Gergen discussed in the Chapter 3.4.
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Embeddness of economic action

59. Granovetter {Granovetter 1985} demonstrates why social relations should be included in the analysis of economic action. He observes two biased views: the under-socialized and the over-socialized view. The neo-classical accounts provide an “under-socialized” explanation of economic action. The reformist economists according to Granovetter, who attempt to bring back social structure in economic action do so in a “over-socialized” way. Boths views originate from the idea that there should be some order in the the motivations of human beings.

60. Classical and neoclassical economics operate with an atomized conception that disallows any impact of social structure and social relations on production, distribution or consumption. On the other hand the over-socialized view, Granovetter argues, considers that “…… the ‘social influences’ are construed by economists as social processes in which actors acquire customs, habits, or norms that are followed mechanically and automatically, irrespective of their bearings on rational choice.” Both have in common a conception of action and decision carried out by atomized actors. However, he continues, actors do not behave or decide as atoms outside social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposeful action are instead embedded in concrete, on-going systems of social relations.
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61. When Granovetter applies these arguments to the transaction cost approach he concludes that social relations between firms are more important to bringing order to economic life, and that authority within firms is overestimated by the transaction cost theory. Granovetter proposes that analysis of transactions should pay more attention to social relations. This will also help to a better understanding of the intermediate forms of governance structure, besides the vertical integration proposed by Williamson.

62. In this article Granovetter enriches the study of relationship and interaction in two ways. First he has demonstrated that it is important to get a better understanding of the strength of relationships in economic actions. Secondly intermediate governance structures can now be studied with social relations as a legitimate dimension. And, other new areas are triggered through this study: the intermediate forms of governance structure encourage the study of the phenomenon of networks {Powell 1990}{Nohria 1992} and the importance of social relations encourages the transformational and temporal perspective. {Gergen 1994}{Giddens 1976}. However, first will be discussed how the Clemons approach brings us to the network organization, and what the implications are for governance practice.
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Network organizations

63. The network organization has become increasingly important as a phenomenon since the 1980s. This part of the literature review will clarify how the academic community has evolved from the transaction cost paradigm towards the network organization paradigm. Malone has been the first to analyse the impact of digital technology on organizations. His analysis is discussed by Clemons and Row based on more empirical research. {Clemons 1993-1}{Clemons 1993-2} The work of Powell is a complementary argument together with Granovetter's analysis of the social embeddedness of economic activity. {Powell 1990}

Move to the Market

64. Malone has started the analysis of the implications of digital technology for both the Firm and Market structure based on his own empirical research and the transaction cost theory as elaborated by Williamson. {Malone 1987} {Williamson, Oliver E. 1979} {Williamson 1981} He argues that the reduction of coordination cost due to the adoption of information technology, will lead to an overall shift toward more use of markets than hierarchies as the coordinating mechanism for economic activities. His argument is based on the implications of the adoption of information technology for asset specificity and product complexity. He argues that various factors affect the relative
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Importance of the costs of production and coordination.\(^6\) However, he has selected only those factors that are mostly affected by information technology.

65. Since a critical part of the coordination cost originates from the communication and processing of information, the use of information technology seems likely to reduce these costs. Besides this two other factors are important in determining which coordination structure is desirable: asset specificity and complexity of product description. The latter is frequently related to asset specificity, but still logically independent from it. Then based on the analysis of a historical evolution, he has proven that these two factors can explain part of the argument.

66. Once the framework is accepted, he continues to explain how electronic markets develop by illustrating three effects: electronic communication, electronic brokerage and electronic integration. The effect of electronic communication is a decrease in cost per unity of information and an increase in the volume of information that can be sent per time interval. These effects both favor markets as well hierarchies. The second effect is the brokerage effect. This increases the number of alternatives available, increases the quality of the final decision and causes a decrease in cost. These effects

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\(^6\) Coase distinguished five cost categories: discovering what the relevant prices are; the cost of negotiating and concluding a separate contract for each new transaction; avoiding risks with a long term contract, which states to a limited degree what is expected from the supplier; taking advantage of tax cost imposed by government; methods
favor markets. The third effect is electronic integration. This has a time saving effect and an error prevention effect. These effects favor hierarchies. It is not hard to understand that based on these three effects it has been predicted that information technology will be widely used for coordinating economic activities. Drawing on these effects Malone starts to argue why an overall shift can be expected.

67. His first argument is the assumption - with some empirical support - that information technology is likely to decrease coordination costs, due to the nature of coordination. Coordination is much based on information processing. The second argument is based on the empirical research by Malone himself, and indicates that the coordination cost of markets that were higher than those of hierarchies, very likely will decrease. So it is likely that this will lead to markets becoming more desirable in some situations where hierarchies were previously favored. The third argument is his reasoning that the line of asset specificity will shift to the right, and the line of product description complexity will shift upwards. Therefore the result will be an increase of the share of activities that is coordinated by the market mode coordination.

**Move to the middle**

68. Clemons has found contradicting empirical results to the thesis of Malone and has extended the Transaction Cost Economics focus
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to include the level of *explicit coordination* as an important dimension of economic organization separate from the question of ownership. {Clemons 1992} This implies that an entrepreneur would now have three coordination mechanisms at his disposal: price, hierarchy and explicit coordination. For a better understanding of these implications he has analysed the middle area between Market and hierarchy. This area includes companies that have created an internal market through transfer pricing, or have invested in a high level of external coordination without joint ownership.

69. Clemons argues that the developments of environment and technology are a continuous source of efficiency opportunities through coordination. Especially the technological development of IT is the driver for three market trends: an increased demand for coordination through IT; a substitution of other resources by IT; a development of coordination intensive structures. However, coordination incurs both costs and risks. His contribution to the theory is that he explicitly separates the two areas in his analysis in order to better understand coordination. Although they are often linked, this is not necessarily the case. Clemons perceives this distinction as extremely important for the understanding of the role of IT.

70. Coordination costs are the costs of coordinating decisions and operations among economic activities, in order to improve
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resource efficiency. Clemons notes that coordination costs are largely independent of whether the interaction occurs within a single firm or crosses the boundaries of firms. Transaction risk is the possibility of opportunistic behavior by another party to the relationship, leading to uncertainty around the benefits from the relationship. Risks have always an equivalent cost, because either investments can be made to avoid them, or costs occur in the form of capital cost (or expected loss). He has distinguished three major sources of transaction risks: transaction-specific capital, information asymmetries and loss of resource control.

Figure 9 Comparison theoretical governance perspectives
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71. Then Clemons analyzes the impact of IT on these risk areas. Several reasons exist for lower capital cost related to specific transactions: modularity and replicability of know-how; open standards; conversion and translation of protocols and interfaces; reduction of training costs for the use of IT systems. He provides two examples for this: the ATM network of Banks and Client Reservation System of travel organizations. Furthermore he argues that many more opportunities exist for monitoring the coordination activities, and there are many more ways to control the use of resources or the performance of the partner. The latter two also reduce risks in the two other transaction risk areas.

72. However, Clemons also warns against the impact of IT on transaction risks. It can greatly impact the increase or decrease of transaction risks. The lock-in in huge ERP investments may prohibit organizations from benefiting from new opportunities. SAP has also recognized this, and a few years ago – around 2002 – it launched a program called Netweaver to open up their application suit to a more flexible approach to organizations. A second risk aspect is the loss of control over information. Fraud is easier, transfer of know-how and data is much easier, and less visible.

\[^7\text{It is now almost 15 years since the article was published. Probably these factors will be applicable for a considerable period of time. Three main trends support this view: the increased offshoring of IT operations to India; the Business Process Outsourcing; Service Oriented Approach which focuses on modularization within the organization as much as outside. Also the present growth of the}\]
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In Figure A, the transaction costs are in balance in the hierarchy and in the market. In Figure B, it is visualized what the effect is when procurement is done in the market. Transaction risk is relatively high. Firms prefer to make such investments within the hierarchy. In Figure C, it is shown how the Production cost can be decreased by taking advantage of the economies of scale in the market. The membership of The Open Group, an international organization of suppliers and buyers of IT that promotes Open Standards, is evidence that this argument still holds strongly.

Figure 10 Impact of IT on governance mechanism

73. In Figure A, the transaction costs are in balance in the hierarchy and in the market. In Figure B, it is visualized what the effect is when procurement is done in the market. Transaction risk is relatively high. Firms prefer to make such investments within the hierarchy. In Figure C, it is shown how the Production cost can be decreased by taking advantage of the economies of scale in the market.
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and at the same time reducing transaction risk due to IT investments.

74. The move to the middle hypothesis was elaborated further in 1993 by Clemons et al., both theoretically and anecdotal. {Clemons 1993-1} {Clemons 1993-2} The logic is as follows: ..... "IT can reduce the coordination costs as well as transaction risk. This runs counter to the historical implications of the organizational theory tradition: this combination of reduction of costs and risks is essential to understanding the impact of IT on the organization of economic activity. We have argued that these combined effects should lead to a greater degree of outsourcing since this would exploit economies of scale and/or scope, and also keep risks at an acceptable level. We have also presented some propositions about the governance structure of interfirm interactions. In particular, we predict an increase in the level of explicit coordination, which thus implies increased reliance on fewer, long-term cooperative suppliers." ({Clemons 1993-2}p 27).

75. The analysis of Clemons et al. also supports the embeddedness of economics in social relations. He mentions several complicating factors with cooperation and coordination: human factors; different objectives, different performance measures, and incentive structures; different traditions. Trust will still be more important than technological investments in overcoming these challenges. It is only the level of trust that determines the success or failure of partnerships. Successful cooperation according to Clemons requires careful selection of partners, similar objectives for partnership. And, also unique resources from both parties are of
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critical importance, so that each party needs the other. Also an ongoing interaction is needed to retain confidence. These conditions are perceived important for the effectiveness of explicit coordination and cooperation.

76. Besides the human factor a challenge arises when incongruence of objectives exists. If short and long term objectives differ, this can strain the cooperation substantially. Also in this case attention should be paid to maintaining personal contact and trust, according to Clemons. Last but not least he notes that the pride in traditions, culture and corporate history may cause conflicting situations. And again here he suggests maintaining personal contact and trust as a remedy. In short, the extension of the framework with social relations and individual beliefs and assumptions is supported.

77. In a third article Clemons et al. have argued that the coordination structure is also critical. It is not only the IT that has to be taken care of. Also what information to share or which price structures, should be taken into account. These may have as much impact on its effectiveness as the IT decisions. And another factor is found in the change of bargaining power. In the case of P&G it is shown that the change in bargaining power has been off-set by a
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countervailing power

While developing the external cooperation this has to be considered.

Discussion

78. One of the key conclusions from Clemons's and Granovetter's insights is that the set ownership/explicit coordination are congruent with individual behavior/social relations. The consequence of the phenomenon that in a digital world coordination takes place more often without ownership, is that individual behavior and social relations become critical. Factors that gain importance are: personal context; trust; bargaining power; goal congruency; unique contributions by each party; coulance for the other culture.

79. Clemons's analysis provides a more complete framework - compared with Williamson's - for the cost structure, because it includes the impact of IT on transaction cost and transaction risks. The cost structure contains the aspects of business, IT and social relations. During the analysis of Clemons, I have found two other aspects that are important but less visible in the cost structure: maturity of the operations and transformational cost. Both are critical for the performance of organizations. The maturity of the

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8 This is supported with one of my own experiences as a consultant to develop an internet application for 'schadeverzekeringen' for five insurance companies. The application would reduce the administration cost at the headquarter considerably. However, the adoption by its intermediaries has been very slow due to the incongruence of benefits / cost ratio. A new structure had to be elaborated to convince the intermediaries to join the exploitation of the 'schadeverzekeringen'. One large insurance company has resolved the issue by integrating intermediaries nation wide.
organization determines how effectively the organization can behave according to its assumptions and how it will cope with contextual constraints. Transformational costs incur a high risk, if not properly applied. These are high level investments with many change aspects to the organization as well as operations.

80. Coordination without ownership also creates dependencies. P&G and Wallmart have developed explicit coordination through joint information systems development on a very large scale, which was profitable for both sides. However, this investment could potentially put P&G in a position to exploit the relationship opportunistically. Clemons has described this dependency as follows: .... “However, this transaction risk is greatly reduced by two factors. First, and most important, Wal-Mart's size gives them considerable bargaining power with P&G. Second, the information from the system allows Wal-Mart to monitor P&G's performance as well as the performance of other suppliers.” The awareness of such dependency is critical to the future benefits in this case. This example shows the need to review system approach literature in which the understanding of interdependency between parts of the system is an important aspect.

81. Clemons ideas are built on the work of Coase, Williamson and Malone, and provide an elaborate structure of the explicit coordination as a specific way of coordination - besides price and Firm - between two parties. He has provided several factors for the interaction governance framework. He includes the social
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relation as a dimension in the framework for overcoming cooperation and coordination problems and has therefore introduced: explicit coordination, trust, different objectives, different traditions, different performance measures, incentive structures and the human factor.

82. Clemons has explicitly included factors related to the (social) context, controllable frame, transformational frame, group, and dependency. Together with the Granovetter's argument that social relations should be included in the transaction cost theory, the support to include the following domains has been convincing so far: context, structure, group, dependency. The effectiveness of structures depend on many factors that are connected to social relations. Also the context creates dependency when different traditions meet during coordination. Coordination also has to deal with the different measures of performance. Later on we will see that outcome gets meaning only in its cultural context. Therefore the measures will also have to be aligned in accordance with the different histories of the two parties. The actor is discussed and is important, but not yet sufficiently justified. Neither has the transformational frame or learning as intervention been explicitly discussed yet.

A new coordination mechanism

83. How far is explicit coordination from a network organization?

The investigation of network organizations is a logical next step
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towards building insight into governance structures. Clemons has identified explicit coordination as a type of governance structure. He has included concepts such as coordination cost and transaction risks. Although this is a purely economic perspective, he has also argued that social aspects should be considered. Granovetter has discussed this as the problem of embeddedness of economic action. Granovetter argues that economic activity is embedded in social relations.

84. Clemons has noticed several phenomena that illustrate the limitations of the dichotomy. Also Ghoshal has emphasized the importance of social relations and he puts purpose as a critical contributing factor for accomplishing organizational goals. Powell provides a framework that visualizes these views, and he integrates them with the market – hierarchy dichotomy. Granovetter has built his argument not only on the isolated relationship, but has embedded the dyadic relation in a network of relationships. \{Nohria 1992\} This is also a critical insight for governance. It determines the scope a manager should take. Of course in each situation an assessment should be made as to how much influence is needed. Granovetter has split the argument into the influence of embeddedness on economic action, and trust and malfeasance.

85. Relational embeddedness has quite direct effects on individual economic action. History of interactions determines largely bilateral relations. This is partly captured through economists' use
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of interdependent utility functions, which show that not only particular relations may affect your behavior, also the aggregated impact of all such relations. Structural embeddedness has a subtle effect on economic action. When a group of relations is strong it will have more impact, than when it is weak. Think of employees that can get along very well and their relation with a stupid boss, vs. employees that are very heterogeneous.

86. Granovetter continues to explain the impact of cohesive and heterogeneous groups. The economic action of individuals may accumulate in outcomes or institutions. Cohesive groups are not only more efficient in spreading information, but also at generating normative, symbolic, and cultural structures that affect behaviors. This may be called a high density network. So structural embeddedness affects the behavior across the social networks. Fragmentation of network structure on the other hand will reduce the homogeneity of behavior, both in the formation of norms and in the gravitation to a particular price. The structure of relations determines strongly what shape the outcomes or institutions take. He concludes on economic action and embeddedness, that embeddedness of economic action may be structured in such a way that individual actions are either blunt or contained, or amplified and concatenated as where networks cross the boundaries of individual firms. This conclusion has much
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relation with the system dynamic concept of reinforcing and balancing feedback loops.

87. Then Granovetter explains the embeddedness approach to trust and malfeasance. {Granovetter 1985} Cheating a friend depends on the nature of my relation with him, the structure of incentives and the moral principles I apply. Both these moral principles and the structure of incentives are dependent on the relation I have, not only on the relation structure but also on the *structural embeddedness*. If both friends are strongly connected, then many connections (high network density) exist. We can thus expect greater *pressure* in high network density. Social and economic cost will be very high when developing a bad reputation. This is why cohesive groups are more efficient in developing normative, symbolic, or cultural structures that affect our behavior.

88. Granovetter continues to ask himself how embeddedness leads to outcomes and institutions relevant to trust and malfeasance. How widely disorder spreads depends on how the network of social relations is structured. Groups can, for instance, promote their own vested interest at the expense of some putative larger general interest.

89. To explain and understand outcomes the structure of connections by which a group exists and the structure of connections should be taken as a starting point. Cohesive groups have influence on the
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relation structure of friends. Also morality and interest (social or economic) have an impact. Furthermore regularized expectations can have impact on the structure of relations between friends.

{Granovetter 1985}

Figure 11 Embeddedness of transaction in social context

90. How these insights build to the explanation of how institutions originate, is much more complex. There is one account that attributes a great impact of culture on institution formation, and another account that emphasizes efficiency as a key factor. However, the insight is still limited, and more research is needed,
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according to Granovetter. Granovetter has explained rather convincingly the importance of social aspects for governance. This supports very much the argument of Powell to take a perspective of network organization when influencing action.

91. According to Powell (Powell 1990), transaction cost theory cannot explain the rich array of alternative forms. The view that transactions are distributed along a continuum suggests that markets are the starting point, the elemental form of exchange out of which other methods evolve. Powell argues that the view of transaction costs is a historical distortion of historical and anthropological evidence. Economic units did not only arise due to the inefficiency of markets, but also from dense webs of political, religious and social affiliations. Neither do hierarchies represent an evolutionary end-point of economic development. The history of modern commerce is a story of family businesses, guilds, cartels, and extended trading companies.

92. Also studies into the growth of small firms have created some doubt as to the usefulness of the continuum of market and hierarchies. It just fails to capture the complex reality. This conception of economic life ...... “blinds us for the role played by reciprocity and collaboration as alternative governance mechanisms....” P 299

According to Powell so far the critics of the pure economic view have criticized more than built an alternative. The most important critics focus on the embeddedness of economic activity in social
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structures, and the other focus on the intermingling of many different forms of exchange. Powell provides an alternative, and integrates the view of market and hierarchy with that of a network organization.

93. Powell justifies this view of economic activity by arguing that "the stylized models of markets, hierarchies and networks are not perfectly descriptive of economic reality, but they enable us to make progress in understanding the extraordinary diversity of economic arrangements found in the industrial world today." He summarizes and clarifies the characteristics of the different governance structures extensively. He has characterized the major differences briefly. Markets demonstrate the hardest possible bargains, and entail limited personal involvement. They coordinate the supply and demand of discrete transaction. No coercive power is involved. A hierarchy is well suited for mass production and distribution. Participants have a concern about their careers. Network forms appear when a sharp fluctuation of supply and demand exist and there is a need for efficient, reliable information and indefinite sequential transactions. Networks have reciprocity central to the discussion. In these forms security and stability encourage new ways to accomplish tasks; trust reduces complex realities. Networks also commonly involve aspects of dependency and particularism, and may restrict access by establishing enduring patterns of repeat trading. Thus newcomers will not have easy access either intentionally or more subtly through barriers as unwritten rules.
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<tr>
<th>Key features</th>
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<th>Network</th>
<th>Hierarchy</th>
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<td>Employment relationship</td>
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<td>Means of communication</td>
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<tr>
<td>Methods of conflict resolution</td>
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<td>Degree of flexibility</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
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<td>Amount of Commitment among the parties</td>
<td>Low</td>
<td>Medium to High</td>
<td>Medium to High</td>
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<td>Tone or climate</td>
<td>Precision and/or suspicion</td>
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<td>Mixing of Forms</td>
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<td>Repeat transactions as hierarchical documents</td>
<td>Status Hierarchies</td>
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<td>Explicit Coordination</td>
<td>Longterm arrangement</td>
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Based on sources: {Powell 1990}p300, {Ghoshal 1996}p37, {Clemons 1993-2}

Figure 12 Comparison of forms of economic organizations.
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or informal codes of conduct. As a result most of the network parties lose some of their independence.

94. After his explanation of the different organizational forms, Powell discussed a number of cases: networks in craft industries such as construction, publishing, film and recording industries. He has also investigated cases from different geographical regions: German textiles; Italian model; intertrading groups in Japan and Scandinavia. Furthermore he has analysed cases of ‘Strategic Alliances and Partnerships’, and cases of ‘Vertical Disaggregation’.

95. According to Powell these cases tell a consistent story. Somehow these modes of exchange represent a particular form of collective action: 1) cooperation can be sustained over the longer term as an effective arrangement; 2) networks create incentives for learning and the dissemination of information, thus allowing ideas to be translated into action quickly; 3) the open-ended quality of networks is most useful when resources are variable and the environment uncertain; 4) networks offer a highly feasible means of utilizing and enhancing such intangible assets as tacit knowledge and technological innovation.

96. These common aspects suggest a specific organizational form. However, the driver for the origin and development of networks is not simple to identify. Economizing has been a relevant concern in many cases, but the benefits of network arrangements are far
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more valuable. Some major concerns that motivate participants are: reduction of uncertainty; fast access to information; reliability and responsiveness. But Powell argues that more and broader ramifications should be accounted for as well. He mentions three points. First he argues that the principle of the Transaction Cost Approach to take the transaction cost as the primary unit of analysis, is misplaced. Relationship would in some cases be a better unit of analysis. The second point is the exclusion of state policies. The role of the state is quite important in shaping the context of each organization. And the last point is his observation that to make serious progress in understanding the diversity of organizational forms, we need arguments that are much more historically contingent and context dependent.

97. When Powell further analyzes the circumstances that promote and sustain network forms, he suggests the following three factors as critical components of networks: know-how, demand for speed, and trust. As regards know-how he comments that the exchange of competencies – knowledge or skills – is more likely to occur in networks. Especially in circumstances that require operational integration or under conditions of uncertainty about how to obtain desired outcomes, there is a strong motive for participants to share information with one another. In the same analysis he found that this sharing of information often leads to the emergence of common values. The second factor is especially
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important for highly dynamic market conditions, since it rewards the key strengths of networks: fast access to information; flexibility; and responsiveness to changing tastes. In such an environment networks possess a comparative advantage.

98. The factor trust has been less elaborated by Powell. However, he has made an interesting suggestion based on Axelrod. He has demonstrated according to Powell the powerful consequences of repeated interaction among individuals. When there is a high probability about future association, people are not only more willing to cooperate, they are also increasingly willing to punish those who do not cooperate. This finding suggests the importance of the history and the future in the relationship. According to Kramer and Ferrin {Ferrin 2006} {Kramer 1999} trust has been analyzed much more than before. In the next section some accounts will be given of this research.

Benefits of trust in relationships

99. Several authors (Ghoshal, Powell, Granovetter, Clemons) have recognized that in the economic perspective trust and structure of relations are important characteristics. Since their research these topics have not yet been clarified completely, but much progress has been made in recent years. {Kramer 1999} {Ferrin 2006} Kramer is concerned with the study of organizations as complex social systems, what is congruent with this thesis. The central concern of the field that he investigates is to identify the
determinants of intra-organizational cooperation, coordination and control. Much literature in this field arose during the 90s. And at the same time theories of trust have been applied to a variety of organizational problems. He assessed the status of this research by reviewing the different concepts of trust, describing identified antecedents and consequences and by searching for barriers to trust.

Ferrin argues that recent evidence indicates that interpersonal trust has direct or indirect impact on desired outcomes. His research contributes to this thesis, because he also investigates the impact of governance on desired outcomes. (see chapter 3.3) These findings support the assumption that trust is an important aspect to achieve effectiveness of interaction in network settings. The contribution of Ferrin is that he discusses the question: what factors determine trust? Much research has focused on the interpersonal behaviour of the trustee during prior interactions. Numerous studies support the notion that individuals diagnose trustworthiness primarily by referring to information about trustee behaviour in the dyadic relationship. The limitation of that research is that it did not consider the social nature and context of dyadic relationships. However, trust is not only influenced by the history of the dyadic relationship, but also by the aggregate of relationships in a complex social structure. The purpose of Ferrin's study is to better understand the dyadic relationship in its
context, by being aware that trust may be influenced by third party relations. He argues that little research has been done on the effect of third-party relations on interpersonal trust.

101. Kramer has found agreement in literature that trust is a psychological state. He further reports that from the two perspectives of trust the rational choice concept of trust is not tenable. More attention should be paid to social and emotional influences. Furthermore he argues that trust is correlated to people’s beliefs and trust-related experiences. Reciprocity enhances trust and history of the relationship is critical in trust development. This suggests that knowledge of the practice of other organizational members is important source for judgments about trust. It requires individual knowledge or costs of negotiating reciprocity when interacting with other members to build trust. Since this is hard to practice proxies were sought and found by researchers. Four proxies for judgments about trust were found: third-parties as conduits of trust, category based trust, role based trust and rule based trust.

102. Third parties tend to be incomplete in their information or amplify trust when they have a special tie. However, a study provides evidence of the crucial role third parties can play as a go-between in new relationships enabling individuals to roll over their expectations from well-established relationships to others in which information is not available. Category and role based trust
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are de-personalized way to build trust in a relationship. Category refers to the tendency that a member of a group is more trusted than somebody from outside the group if his membership of the group is accepted. Role based is more based on the technical know how of a person. An example is the certification of digital architects at the Open Group. This role has been developed and accepted in a broad international community of professionals, and has been gradually accepted over the past decade as a valuable role to resolve specific problems in business IT alignment or technical issues. The rule-based trust is based on shared understanding and socialization about the common rules of behavior that are accepted. Rule-based trust has to be maintained by the organization.

103. Kramer has found three levels of benefits of trust: reducing transaction costs within an organization; increasing spontaneous sociability among organizational members; facilitating appropriate forms of deference to organizational members. Kramer argues that giving the benefit of the doubt can increase joint gains considerably in a transaction. Furthermore he found that the individual’s willingness to engage is enhanced by trust. As regards the third level he remarks that trust is important in positions of authority. First authorities cannot continue to explain their decisions, they would not be able to manage anymore. Second not every single action can be monitored. As a result efficient
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organizational performance depends on individuals feelings, their willingness to comply with directives and to defer voluntarily to the organizational authorities. In addition trust becomes more important when conflicts arise because it influences acceptance of dispute resolution procedures and outcomes. Since authorities see this challenge become greater in digital organizations, they need to counter balance this effect by trust. Thus the benefit of trust in digital organizations is that it becomes a means of authority.

104. Kramer has also reviewed what barriers were mentioned in literature. He found several: suspicion, fragility of trust, breach of psychological contract and technologies. Suspicion plays an important role. Contextual factors, more categorization and differentiation may increase distrust. Also unmet expectations and general beliefs of institutions may play a role. Technologies make it difficult for employees to show their trustworthiness, and it also becomes difficult for authorities to find out what the real distribution of trust is in the organization. Findings in literature show that trustworthy employees sometimes feel impelled to cheat when perverse behaviours are enforced by new rules.

105. The third barrier is the breach of the psychological contract and its impact on trust. In literature support was found that a negative correlation exists between psychological contract breach and several important forms of employee contributions to the organization: job performance, civic virtue (extra-role) behaviours,
and intentions to remain with the organization. Finally Kramer suggests that some cognitive factors contribute to asymmetries in the trust building: negative events (trust destroying) are more visible and noticeable than positive (trust-building) events; trust destroying events carry more weight than trust-building events of comparable magnitude; asymmetries are reinforced by the fact that sources of bad news tend to be perceived as more credible than sources of good news. This asymmetry leads to the question of diffusion of trust and distrust in by third -parties in a network organization. Research suggests that distrust in weak relations is amplified more than trust in strong relations by third-parties.

Trust and networks

106. Ferrin argues that recent evidence indicates that interpersonal trust has direct or indirect impact on desired outcomes. Hence this article may contribute to the findings in our thesis, which considers different dimensions of outcome: power, wealth, value, knowledge and beauty. In this thesis trust is related to the individual who may be a trustee or trustor. Therefore interaction effectiveness depends directly on trust. This article discusses the question: what factors determine trust?9

107. Several ways employees make judgements about co-worker's trustworthiness: direct experience; little or no direct contact. The

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9 When there is a proven relationship between trust and outcome, these factors should be part of an organizational governance mechanism.
perception may be wrong based on direct or indirect judgement. However, this does not make the perception less real or relevant to the employee. Author is most interested in the judgement of individuals of the co-worker on the integrity and dependability. He defines for this article *interpersonal trust as the individual's belief about the integrity and dependability of another*. Perceived integrity is proven by psychologist as a key dimension on which individuals evaluate others.

108. Ferrin defines an employee as trustor and co-worker is trustee. An individual may be a trustee and trustor at the same time. Third-parties are defined as the individuals who may connect potentially an employee to a co-worker within an organization. This can be done in three distinct ways: network closure, structural equivalence, trust transferability. The focus of this article is on the degree of trust within a relationship. Hence, the unit of analysis is the relationship, not the actor. Ferrin found substantial support for the fact that employees diagnose trustworthiness by referring to co-workers behaviour in the dyad. It is considered diagnostic if it is performed voluntarily rather than formally required, rewarded or sanctioned. Voluntary behaviour is considered an important source of information about the character and motives of a co-worker. Priori research indicates that cooperative behaviour is considered a diagnostic of trustworthiness, and competitive behaviour is considered as self-
serving. In this article focus is on voluntary and cooperative behaviour: *interpersonal organizational citizenship behaviour (OCBI)*.

109. Ferrin has shown with his study that besides organizational and individual factors also social-contextual factors promote behaviour that earns trust. This study has shown that structural equivalence causes individuals to adopt similar behaviour and attitudes. This study adds that it implies cooperative outcomes in the forms of OCBIs and interpersonal trust. Therefore structural equivalence can be added as predictive value to trust, besides departmental affiliation, location and interpersonal communication. However, he has also shown that network closure does not predict trust increase because the common ties only gossip based on the existing level of trust. So the gossip is not increasing or decreasing trust. It is only that the reputation is carried forward. Finally he has shown that trustors use dyadic behaviour and the history of interaction as core factors to draw inferences about a partner’s trustworthiness. On top of that they draw also on third-parties to inform judgments. As regards new and established relationships he has found that trust transferability is equally important.

**Discussion**

110. Powell’s analysis contributes also to the identification of factors that have relevance in governance structures. He has elaborated a third type of governance structure, with a comprehensive set of
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characteristics: the network organization. This gives direction to the style of management in operations that rely on long-term relationships, know how and innovation and information sharing. These are all aspects of the digital world. The suggestion to include history and context is also critical. This suggests the importance of continued action. Several authors about governance have suggested including history. The model for interaction governance should therefore include the temporal aspect. The network organization approach by Powell further supports including the group domain. Networks also create a link to learning practices through networks. The connection to the individual has been indirect so far. History inclusion is suggested, and it supports the view that we have to include the system dynamics approach strand in this analysis.

Network Organization

111. In the post-industrial society knowledge and information are replacing capital and energy as the primary wealth-creating assets. Society and organizations deal with more and more knowledge by more task specialization. Support for this view can be found in the trend of outsourcing. In The Netherlands outsourcing has increased 10% overall, but it doubled within the medium segment of outsourcing deals. {Zaal 2007} This is a substantial increase in outsourcing of IT Services and Business Services and supports the view that the digital world continues to specialize. And,
specialization means more coordinating problems and tends to result in more levels in structure and hierarchy. \cite{Achrol 1997} This is also demonstrated by empirical data. \cite{Beulen 2006} Another consequence of this trend is that relationships have to be managed without authority. For control the transaction cost approach has proposed to use contractual arrangements. \cite{Clemons 1992} \cite{Clemons 1993-2} \cite{Coase 1937} \cite{Malone 1987} \cite{Williamson, Oliver E. 1979} \cite{Williamson 1981} The other strand – which takes a view of embeddedness – proposes to control relationships through social norms. \cite{Granovetter 1985} \cite{Ghoshal 1996} \cite{Powell 1990} Achrol has elaborated this approach and identified the critical factors for governance within a network organization. \cite{Achrol 1997}

112. Achrol has examined the difference in style between the dyadic-exchange relationship – as elaborated in the Transaction Cost Approach - and the network relationships. The historical development of organizations progresses unmistakably from the vertically integrated functional firm and the matrix organization into network organizations. He argues that a network organization is different from a mere set of relationships between different market parties. He distinguishes the network organization from a simple network of exchange linkages by the density, multiplexity, and reciprocity of ties and a shared value system defining membership roles and responsibilities.
Achrol argues that the four types of network organization he has found in literature justify this organizational paradigm. However, the interest of this thesis is not so much for the identification of the different types of network organization, nor their reason of existence. It is rather the examination of the factors that are critical sustaining purposeful networks. His major contribution to this investigation is the demonstration of the existence of network organizations as described by Powell. [Powell 1990] He has not only illustrated and discussed the major characteristics of network organizations: network purposes, power in networks, commitment and organizational interdependency, and social norms. He has also identified the major factors that are applied to keep these networks in good shape.

Achrol has shown four possible purposes for network: exchange of knowledge, skills or expertise; functional outsourcing for specialist level of performance; ascertaining resource availability and reciprocity; enhancing sense and response capabilities for flexibility. The major source of power within these four networks has not been the coercive power. Achrol says, ".......The kinds of power that are compatible with network relations have less to do with authority and carrot-and-stick approaches to coordination. The kinds of power consistent with interorganizational influence in networks build social bonds and close relationships, that is, expert, reputational, and referent types of power." [Achrol 1997] And after lengthy discussion he draws two lessons as regards power in networks. First he reasons that the sense of
family, belonging and security that the network has been able to cultivate among its members, is critical. An example is lifetime employment. Secondly he concludes that how power is exercised in the network to keep checks and balances, is more important than where it resides. Seldom is it exercised by fiat and almost always behind-the-scenes manoeuvring and consensus. People rise to authority based on proven managerial skill and motivating vision shared by the constituents. Finally he argues that it is even more important to answer the larger question: how one develops a culture of mutuality and solidarity so necessary to a system of decentralized power.

115. Achrol recognizes two factors developing this culture: commitment and interdependence. Commitment is an attitudinal construct described in terms of affective commitment, psychological attachment, identification, affiliation, and value congruence. It has two important components: the attitudinal and the instrumental. The reasoning is that when parties share goals, values and an affective attachment, they can be expected to act instinctively for the benefit of one another. However, how is commitment generated?

116. He continues that affective attachment is enhanced when people feel they belong to an organization, which provides assistance and support during difficult times, offer long-term security of employment or returns, and in whose future and fortunes they feel
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they actively participate. Besides this affective attachment, commitment can also be generated through interlocking management. This creates webs of interdependency that should not be seen as controls and coordination, but rather as a glue that holds the network remarkably stable, a cohesive and mutually oriented economic system. As the Japanese say: to keep each other warm. Achrol continues that commitment and interdependence provides the foundation for the development of social norms of governance in network organizations.

117. Achrol argues furthermore that the dyadic-exchange paradigm assumes implicitly that relationships contain destructive forces of disintegration. {Achrol 1997} Here the instrumental forms to control these are cooperation (based on legal contracts), conflict resolution and opportunism. Network organizations have constructive focus, and are based on reinforcing long-term relationships. Here enhancing loyalty and dialogue are critical. These need trust and social norms of behavior. Achrol reasons that mutual trust in a social relationship reduces the development of opportunistic intentions and thus may eliminate the need for structural mechanisms of control. However, before studying the determinants and consequences of trust in exchange relationships Achrol develops a better understanding of the three dimensions of trust: risk (willingness to become vulnerable); faith building versus risk taking; self-regulation versus authority and control.
118. Trust implies some sort of uncertainty and involves relinquishing some influence and control. Hence, some risk taking is involved as well. And, risk taking and faith are very close to each other. Here willingness plays a key role in the operation, as well as the choice between ‘faith comes first’ or ‘risk taking strategy’. According to Achrol the latter has more impact. However, faith building runs fewer risks. Trust building is also greatly enhanced if interactions are perceived as non-evaluative, spontaneous, rather than planned, empathic rather than neutral, and suggestive rather than directive. In brief, a problem-solving approach is reinforced rather than by a control approach. The third dimension of trust is the conditional role played by self-regulation or verification process. To build trust the system must be self-regulating rather than through authority. Traditional communities evolved culture and a set of social norms by which its members were expected to deliver or risk being ostracized.

119. Achrol defines the social norms of exchange as patterns of accepted and expected sentiments and behavior shared by members of an exchange system, having the force of social obligation or pressure. {Achrol 1997} Five of such norms have been discussed in literature, and the sixth has been discussed by Achrol {Achrol 1997} himself: restraint of power. However, he continues that there is still considerable vagueness and overlap of these concepts.
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120. On the other hand I believe that they will still serve to be included in the model for interaction governance, because these reflect very well the embeddedness of economic action in social structure of social norms as explained by Granovetter. {Granovetter 1985} The five norms that underlie relational governance are: Solidarity, mutuality, flexibility, role integrity, and harmonization of conflict.

Discussion

121. Achrol has elaborated the ideas and insights of Granovetter, Ghoshal and Powell into a set of characteristic factors to reckon with when operating in a network organization. His focus has been primarily to show that the network organizations as described by Powell exist. Then he has chosen one specific type of network to study the relevant factors. He has used the conventional vertical marketing channel as a reference. Achrol himself does not motivate why he has chosen this, but I think his choice is an appropriate perspective for this thesis. This network type has a clear purpose – special features of performance –, and its members are all specialized firms that have to contribute to a common goal. I think this is the most realistic concept of network organizations in the western economies: a clear purpose, and members have to contribute to a joint goal. In IT outsourcing contracts this is clearly the case. Usually there is a contract that
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regulates the transaction. However, the change development process needs much collaboration.

122. Another reason that makes his work valuable is the comparison he makes with the dyadic-exchange relationships (Transaction Cost paradigm). In the real world organizations are seldom pure, and present trends show a mixture of these two paradigms in organizations. The collaborative experience of Capgemini is one example, in outsourcing contracts also more dyadic relationship examples exist. This does not only happen because managers choose for a different approach. Rather, they become aware that control is not always possible or feasible, and have to find other ways to exercise governance in a complex web of interdependent relationships.

123. Achrol has contributed insights into the type of relationships that exist and the operational aspects of network organizations. The network organization is conceived as a set of relationships that is characterized by density (members interconnected with each other), multiplexity (many simultaneous processes), reciprocity (members support each other) and shared values. He provides indepth insights for the group domain of the governance model. Implicitly his theory on the characteristics of network organizations illustrates ways to show leadership or to choose for learning strategies.
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Summary

124. How to ensure that economic exchange between actors contributes to the goals of an organization or the purpose of a network of relationships? This is the major question for a manager. The transaction cost view considers risk exposure and the cost of mitigating these as the primary drivers for finding solutions. Risks arise among other things due to the opportunistic behavior of actors. Williamson argues that the assessment of risks, authority structure, coordination mechanism, actor's motivation and interdependence need analysis. These are the major factors on which to build the governance structure. He proposes four types of governance structure: market governance, tri-lateral governance, bi-lateral governance and unified governance which relate to the different types of transaction. In my view other types of governance exist: co-create and shared governance. Evidence has been found for these in the practice of IT engagement. Capgemini positions itself as the champion of this type of relationships in IT service provisioning: the collaborative experience.

125. Other factors but not integrated in Williamson's theory for Transaction Cost management are: continuity in the relationship; learning only as far as competition is involved; network typology. He has only mentioned them.

126. Social embeddedness has enriched this transaction cost view. This view has demonstrated how both economic and social factors play
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a role in the effectiveness of interaction during encounters. Their conclusion is that personal characteristics and social networks are more important than authority/ownership. This brings in the history and future of actors, and social context. The consequence of the phenomenon that in a digital world coordination takes place more often without ownership, is that individual behavior and social relations become critical. Factors that gain importance are: personal context; trust; bargaining power; goal congruency; unique contribution by each party; coulance for the other culture.

127. Clemons argues that absence of ownership, and consequently authority, has an implicitation for governance. Now interactions need also explicit coordination to mitigate transaction risks. Sources of transaction risks are transaction-specific capital, information asymmetries and loss of resource control. This strand contends that the level of trust is the only thing that develops coordination. Careful selection of clients, similar objectives and unique resources may be needed for successful cooperations. Also the information and coordination structure plays a role in the outcome. Organizations strive for more explicit coordination to mitigate risks, and develop into a web relationship that has to be coordinated, and is embedded in other webs of relationships.

128. This enriched view gets close to network organizations, in which many relationships exist without authority structure. Achrol has shown that network organizations can be visualized. In this type
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of organization commitment and interdependence play a critical role. Commitment is an attitudinal construct described in terms of affective commitment, psychological attachment, identification, affiliation, and value congruence. The reasoning is that when parties share goals, values and an affective attachment, they can be expected to act instinctively for the benefit of one another, in which case one may talk about commitment. Affective attachment is a strong tool to develop commitment. However, commitment can also be generated through interlocking management. This creates webs of interdependency that should not be seen as control and coordination, but rather as a glue that holds the network remarkably stable, cohesive and a mutually oriented economic system. Achrol has demonstrated the existence of network organizations and has described their operational aspects.

129. Until now the authors have argued that exchange efficiency and effectiveness may be based on authority and control structures, or on social norms. The latter emphasizes the governance of groups and networks, trust and commitment. The former emphasizes boundaries, contractual agreements and opportunism. The former view has a biased view on the economic perspective, the latter view should not forget the economic perspective. Insights have furthermore been provided on ways to structure interactions, manage groups and networks, how to show leadership and development of a learning frame. The model domain of
dependency and individual have only been touched, but not yet sufficiently dealt with in a governance context. How should one deal with dependencies? Should a manager focus only on the governance of interactions, or should he remain focused on the control of individuals? What is an effective way to let individuals thrive? How should a manager handle the increasing dynamics? Which type of governance does fit best?
CHAPTER 3.2 CONTINGENCY THEORY

Introduction

1. In the former paragraph we have discussed the economic perspective and its embeddedness in social structure. We have also concluded that the perception of the digital world as a network organization is closer to reality than the perception of it as a number of hierarchical organizations. However, there are other ways to conceive the organization of economic activities. One strand has focused on the environmental conditions and the form of organizations. It evolved from a rational closed system approach, to an open system approach and subsequently to a post modern approach, in which not the form but the variables for organization design become more important.

2. Are all these different perspectives relevant for this thesis? Several developments confronted companies with enormous big challenges. Unexpected newcomers make their appearance in traditional sectors, traditionally clearly distinguished sectors merge, and much shorter development cycles make operations interdependent and complex. How can companies cope?

3. Two main responses can be recognized: the Architecture Approach and the Service Oriented Approach. The first approach
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is a systematic way to visualize the implications of the business strategy for its operations. It provides rules and guidelines for alignment between business and IT. The second response is concerned with the flexibility of organizations in dynamic and uncertain environments. It may be considered as a specific style of architecture for the structural containment of costs and the maximum exploitation of strategic partnerships. The Architecture Approach started as a response to the growing complexity of technical infrastructures. However, after some time it was adopted by other disciplines as well: Information Systems, Information structure and Business processes. Now it is an approach that is widely accepted as a systematic way to visualize and govern the working model that fits best with a specific business strategy. Its added value is the alignment of the different disciplines, the alignment of different management levels and the alignment of short and long term approaches. The Architecture Approach is largely built on the ideas and insights of Thompson and Galbraith, and by some practitioners viewed as a tool for governance of organizations. {Rijsenbrij D., Schekkerman J., Hendrickx H. 2002}

4. The second response has been the division of complex operations into stable, repeatable services. The idea is that this resolves the structural mismatch between the potential adaptiveness of organizations and actual market dynamics. It is a necessary
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approach to containing the complexity of the systems landscape. This complexity prevents the exploitation of critical data. Service Orientation is expected to increase the flexibility of information systems in order to cope with market dynamics. Technology has now the tools and means to apply these ideas. However, Service Orientation should not only be a technological solution to reduce cost, but rather a business approach to obtain flexibility.

5. The architecture community conceives the development of Service Orientation, enabled and enforced by technological development and environmental dynamics, as a style of architecture, rather than a new approach. Architects work from principles. Finding and understanding the right principles drives the design. Service Orientation, they say, is a principle that drives the selection and choice of task environments. If we examine these two responses to a turbulent environment more thoroughly, one may say that the practice of architecture has changed from a rational approach that has emphasized closed systems, with a flavor of open system perspective (the practice of principle based design), to an environmental perspective in which organizational design variables are more important than the form itself. This

10 The Open Group has defined Service Orientation, based on the reference model of OASIS in 2006. The result is a shared description and definition of a very large global community that drives the development of standardization in IT related areas.
environmental perspective may be called Service Orientation.\textsuperscript{11} The latter develops operations for an open system according to specific rules that ensure flexibility, use of standards and re-use of software or business processes. Its aim is boundaryless information flow. The more traditional architecture approach develops operations for more closed systems.

6. Can we say that the rational approach is not valid anymore? No. I do not think that this conclusion is fair. Open systems consist of parts that operate together through exchange relationships and coordination. In this respect it is not relevant how open a system is, it will always contain parts. And the form of these parts remains critical to the functioning of the system. Therefore the thinking of the contingency approach since Thompson\textsuperscript{11} (Thompson 1967)\{Lawrence 1967\}\{Galbraith 1973\}\{Volberda 1992\}\{Volberda 2004\}\{Ross 2006\}, is expected to provide insights and factors for the organization of the specialized parts of a business system - which may be considered as a closed system in itself - as well as factors critical to coordinating these parts. The main focus of the contingency theory will therefore be on the structure of interaction and the management of the interdependence of domains and its parts. Some behavioral aspects are discussed in this strand as well, but to a limited extent. What is

\textsuperscript{11} Both the Netherlands Architecture Forum (of which I have been a board member and initiator between 2001 and 2007) and The Open Group - that has standardization as its mission statement - enjoy an accelerated growth of their communities.
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the contribution of the contingency theory for governance of interaction?

The organizational form

7. Thompson argues that there are two strategies for studying organizations. The *closed system* strategy, which is rational, assumes all resources are appropriate: emphasis on the elimination of uncertainties, focus on efficiency, focus on planning and control. On the other hand there is the *open system* strategy in which the organization is a set of interdependent parts, which make up a whole and receives and contributes to the whole, and which is interdependent with some larger environment. Either the system has its own capabilities to adapt and survive\(^\text{12}\), or organizations are not autonomous and plans may have unintended consequences and are upset by other social units.

8. Thompson perceives an organization as a problem facing and a problem solving phenomenon. And to explain the purpose of an organization he has quoted Simon: "An organization is a problem facing and problem solving phenomenon. The focus is on organizational processes related to choice of action in an environment which does not fully disclose the alternatives available and the consequences of those alternatives. To deal with situations of such great complexity the organization must develop processes for searching and learning as well as for deciding. The complexity, if fully faced, would overwhelm the organization, hence it must set limits to its definitions of situations; it must make decisions of bounded rationality ..... This

\(^{12}\) The Capgemini concept of the Adaptive Enterprise has this focus.
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requirement involves replacing the maximum-efficiency criterion with one of satisfactory accomplishment, decision making now involving *satisfying* rather than *maximizing*..."{Thompson 1967}p9 In this passage lies the rationale for the contingency theory. Thompson argues with this statement that organizations have a problem understanding the environment completely, and that they can resolve organizational issues partly through acceptance of bounded rationality. The question is now how an organization can improve its conditions for performance.

9. Thompson considers organizations as open systems, but subject to criteria of rationality and hence needing certainty. He argues that the central problem to complex organizations is coping with uncertainty through creating parts with (near) certainty. The articulation of specialized parts becomes necessary. Thompson distinguishes three types of uncertainty: *generalized uncertainty*, *contingency* and *interdependence of components*. The first provides a pattern for ordering actions based on the conditions given by the larger environment. The second type determines the freedom that remains because of contingency from external actors. And, the internal source of uncertainty is the interdependence of components.

10. He argues that the solution to uncertainty arising from technology and environment is to seek homogeneous task environments and establish structural units to deal with each task
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environment. Task environments are a reduction of the scope of the environment. He argues that consensus about the task environment determines the dependence of the organization. The task environment determines also the set of contingencies and uncertainties. Choosing a domain means choosing a set of dependencies. Thompson calls this the resolution of the generalized uncertainty.

11. The next threat for the organization's success lies in the interdependence with an environment which may be uncooperative. Organizations try to achieve predictability and self-control through regulation of transactions at their boundaries. If these cannot be regulated satisfactorily the organization tries to move its boundaries – to incorporate or encircle unreliable units. Thompson suggests three alternative strategies for managing the dependence on the task environment: contracting, co-opting and coalescing. This resolves the lack of cause/effect understanding in its task environment.

12. The third threat of uncertainty comes from the internal dependence. Here the organization seeks resolution through coordination of the actions of its components. Thompson suggests three alternative ways of coordination: pooled, sequential and reciprocal coordination. Where boundary contingencies or internal dependencies are numerous, organizations need bounded rationality for local handling of uncertainties. This requires
structural decentralization, or the creation of semi-autonomous sub-systems.

13. Once rationality has been achieved, Thompson argues that we need to take notice of and systematically compare the institutionalized patterns which are incorporated in cultures and societies. Design, structure and the behavior of organizations do depend on technology as well as culture and social structure. Institutionalized patterns are just as critical as technology is. He considers administration the way in which the alignment between technology, task environment and internal operations takes place. It is the human being that determines the variability of the administrative process. Administration according to Thompson is a process of coping with uncertainty, but it is not merely the defensive absorption or blockage of uncertainty. It includes a more aggressive co-alignment aspect which keeps the organization at a nexus of several necessary streams of action. This view preceded in time the embeddedness argument of Granovetter \cite{Granovetter 1985}, and the social perspective of Ghoshal \cite{Ghoshal 1996} and Powell \cite{Powell 1990} in Network Organizations.

Discussion

14. The environmental dynamics in society and the response of organizations suggest that the insights developed by Thompson still hold. Managers should look for domains and decrease inter-
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dependence on technological and environmental perspectives, and create task environments which fit well and give a satisfactory response to external and internal uncertainties. He has provided a way of thinking which explains how to cope with complexity and strive for flexibility. He has mainly provided insights into the dependence between technology, environment and internal organizational structure, and he proposes means to manage the dependence: three strategies for cooperation with the task environment, and three coordination mechanisms to deal with internal dependence.

15. Thompson’s ideas, together with Galbraith’s framework on information processing, is the foundation for the business and IT alignment and the Architecture Approach as practised within Capgemini from 1994 until now. Hence, this theory has had much practical validity. His contribution to the governance model, is the proposition of several ways of coping with uncertainty. He focuses only on the structure of organizations, although he recognizes the importance of the social and cultural institution for choice.

The information processing perspective

16. In the same period Lawrence and Lorsch have described the problem of administrators. "They are constantly struggling with the difficulty of reconciling the need for specialization with the need for coordination of effort." {Lawrence 1967} They notice that in
heterogeneous environments, which have both highly dynamic and quite stable sectors, there is an increasing need for differentiation in organizations. However, the need for integration to achieve a unified effort remains a topic as well. They also demonstrate that integration and differentiation are “antagonistic” in their research report they have provided some clues for coping more effectively with turbulent environments. Their major conclusion is that ...... “integrative devices that meet the six conditions tend to increase both overall integration and differentiation, which then leads to high performance in this industrial environment.” {Lawrence 1967} The importance of integration for performance is underlined when they suggest from their research that integration is a better single predictor of performance than differentiation alone.

17. Galbraith’s conclusions a few years later are congruent with these conclusions. He has investigated the characteristics of integration from an information processing perspective. What does he suggest more specifically on integration? Galbraith {Galbraith 1973} has examined the design of organizations, and especially those that utilize lateral decision-making processes or matrix-forms. He has explicitly indicated that he builds on the ideas of James D. Thompson and of Herbert Simon. His framework is valuable in this thesis because it discusses four alternative strategies for coping with information processing in dynamic and unstable environments.
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18. There are two reasons why this is interesting. First of all, he shows that information processing influences the form of the organization. Secondly, he shows that information technology is a critical factor in organizational design and related innovations cause a continuous need for adaptation of organizational structures. This justifies even more the study of governance as a topic in the digital era. And, in my view the continuous increase of information processing capacity ensures that this interest will remain for a long time.

19. Galbraith pre-supposes that the higher the task uncertainty, the more information is needed by the decision-makers who are involved in operations. If the task is well understood, many activities can be planned beforehand. If this is not the case, changes in priorities, planning and resource appropriation are needed. Task uncertainty is a function of the diversity of the output, the number of distinct input-categories and the degree of complexity of the goal or performance. Galbraith argues that the contingency theory has demonstrated that the degree of task uncertainty is the major variable that determines the organizational form. This is assumed because each alternative organizational form has a different information processing capacity. In his analysis he
assumes that organizations are in fact information processing networks.\textsuperscript{13}

20. Galbraith argues that in conditions of task uncertainty mechanical - bureaucratic - organizations get overwhelmed with information and cannot close the gap between the required information and the available information. In this type of organization the escalation process to higher levels within the hierarchy gets jammed due to the large number of exceptions. Galbraith suggests two strategies to reduce the need for information and two to increase the information processing capacity.

21. The first reducing strategy is the \textit{creation of slack resources}. These include extending delivery times, adding more money to the budget, and building inventory (all which have inherent costs). If a firm fails to actively create a higher level strategy to address uncertainty, this strategy will occur by default. The idea is to identify those performance requirements that can reduce the overload at the cost of an acceptable level of performance. The second reducing strategy is the \textit{creation of self-contained tasks}. One strategy is to change from functional to product groups. This reduces the need to coordinate between the different tasks. The solution is to identify the basis for autonomy (product or market),

\textsuperscript{13} This view is congruent with the perspective of network organizations that is assumed in this thesis.
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the degree of autonomy and the level to which they should report in the hierarchy.

22. The other two strategies increase the information processing power. One is the *investment in vertical integration systems*. The key decisions for resolution are the scope of the system, the frequency of the decision-making and the degree of formalized versus non-formalized information. *Creation of lateral relationships* is the fourth strategy. Moving the decision-making power down in the firm to where the information exists, instead of moving information to the locus of authority, can reduce uncertainty at the decision level. However, this causes a crossing of boundaries of authority and may cause friction. Galbraith has hypothesized that if no explicit choice has been made, the creation of slack resources is automatically adopted.

23. Galbraith's discussion of the friction between lateral relations and authority structure is interesting for this thesis. He argues that there is no proof yet - 1967 - that operations under conditions of lateral relations and multiple authority result in ineffectiveness. However, he continues that the consequences depend on the situation in which these conditions occur. The relevant conditions are: the type of task - e.g. does the time allow for the gathering of more information; the person involved and his capabilities - e.g. some can handle dual authority easily; the climate in which problems can be solved - e.g. open communication to face
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problems jointly is more productive. Depending on these circumstances managers may choose between either communicating the roles of authority or developing the right climate to resolve problems. In the more bureaucratic organizations the best mechanism for integration is the human brain. On the other hand, he continues by stating that it is a fact that conflicts cannot be resolved through role structure alone, specialization leads to dependency between roles, and technology causes legal boundaries to fail to coincide with uncertainties. These facts force the organization to form lateral relations, and because ambiguity and conflict arise between rather than within roles, more attention has to be paid to the process of resolving conflicts between roles. The implication is that more attention should be paid to the decision-making processes.

Discussion

24. This last remark of Galbraith's supports our vision that the focus should shift towards interaction management either within (Thompson, Galbraith) or outside (Powell, Ghoshal) the focus organization. What factors does Galbraith propose, and how can we include them in the Interaction Governance model? He has proposed factors that fit in the context, the structure of Interaction, and in all three intervention domains: leadership, dependence and learning. The factors for the Context are not new. They have been proposed by other strands as well.
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25. On Structure, however, he proposes a critical new factor: information processing structure. This is a means to resolve the problem of information processing and thus reduces the task uncertainty. Authority has been included already with the review of the Transaction Cost Theory. But, other factors are also the decision-making processes, which are critical in lateral - i.e. network organizations. It is the combination of the role, information processing and decision-making processes which determines the shape of the organization. The levels of hierarchy is a choice that results from the domain consensus in business and information structure.

Contingency in practice
Architecture Approach

26. Thompson and Galbraith have provided a foundation for the Architecture Approach that has been developed since the early 90s.\textsuperscript{14} Domain consensus is critical according to Thompson to dealing with generalized uncertainty. And the Information Processing structure is critical to coping with dynamics and diversity according to Galbraith. Both are included as critical elements in the architecture approach. The generalized uncertainty is dealt with by always including a contextual analysis and developing an understanding of the business. This ensures that conditions are systematically included in the solution
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development process.\textsuperscript{15} The information processing structure is dealt with in two ways. In the first way, information is included as a specific aspect area of each organization, in the second way, by considering the application landscape and aligning it specifically with the business processes.

27. Understanding the business and translating its characteristics into the requirements for information processing is one of the most difficult tasks, especially for professionals who have had an IT education and a biased experience in IT. For many years this has been the domain of IT educated professionals. In the 90s suppliers tried to bridge the gap between IT and organization development. However, this has not been very successful. IT governance has triggered renewed attention to this topic. Weill {Weill 2004} and Ross et al {Ross 2006} have published the results of investigations that focus on both the alignment of business and IT, and the governance of IT as a function. Weill identified the domains and style of IT decision-making that are most effective. Ross identified the elements that constitute the enterprise core foundation of top performers. With these elements the logic of business process integration and business process standardization can be visualized.

\textsuperscript{14} It is amazing how much effort has to be put into convincing business managers that a change in information systems has an impact on the method of operations.

\textsuperscript{15} This approach is well established within the architecture community of Capgemini. However, it is one of the weakest parts of architecture development. At the Open Group a special Work Group for Business Architecture is at present bridging the gap between organizational design and the architecture approach. This working group started in December 2006.
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and decided upon. In chapter 1 we have justified already why the function of IT needs specific governance in digital organizations. In the next paragraph we will discuss why IT governance should focus on “interaction management” and not on ‘transaction management”. Subsequently we will discuss the argument of Ross et al.

28. The IT domain may be divided into three domains, which have distinct communities of stakeholders: the strategic domain, the business application development domain and IT Operations. {Agarwal 2002} It is the interaction between these stakeholders that has to be organized. This is a challenge, because stakeholders represent many different domains and distinct disciplines. How can they achieve a shared understanding? The incongruency in motives, inter-dependency and different perceptions demands coordination. It is fair to say that coordination of interaction within and between the three communities is required. How can this be done in a complex environment where technological change prevails, the frequency of change is very high and the number of participants with different motives is large?

29. What is the argument of Ross et al? {Ross 2006} They have finally concluded after a decade of research that to improve IT architecture, most of the research should not be done in the IT department. A different level of analysis is needed. The level of analysis should be at the enterprise level. An enterprise
architecture should reflect the standardization and integration of a company's working model.\textsuperscript{16} The breakthrough lies in an apparent contradiction: top performing firms create a stable base in an ever changing world.\textsuperscript{17} Top performers digitize the core processes, and embed those processes into a foundation for execution. Top performers have decided what makes them great. This determines what the core foundation should look like. With this core foundation they can create a low-cost, high quality core of stability and constancy in a turbulent world. With a strong digitized core, great companies slide smoothly into the next opportunity. They have a competitive advantage over other companies.

30. The foundation is a specific logic that is applied uniquely to this specific company. An effective foundation needs the mastering of three key capabilities: creating and maintaining the operating model; developing and utilizing an enterprise architecture as the organizing logic for business processes and IT infrastructure; an IT engagement model. The operating model shows where the company builds value. The Enterprise Architecture has translated

\textsuperscript{16} This is in accordance with the conclusions drawn by Lawrence & Lorsch: integration is the number one factor for predicting performance.

\textsuperscript{17} This empirical research supports the presumption of van der Sanden in his book The core infrastructure approach. [Sanden 2000] He has elaborated an approach that identifies the basic most stable foundation of a business (organization), and then builds the information architecture on top of that. This presumably provides the most flexible information structure for a company. The only difference is that Ross et al have established the core foundation in processes, and van der Sanden in information based on functions. In my view the core foundation in processes is aligned more with the business strategy.
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this model into terms of business process standardization or integration. The IT engagement model is the system of governance mechanisms that ensure business and IT projects achieve both local and company wide objectives.

31. Describing the model is one challenge. The next challenge is the decision-making. Weill explicitly prescribed the use of different styles in distinct domains of organizing preparation of decisions or the decision-making process. {Weill 2004} The style refers to the roles in decision processes. Decision-making mechanisms should be adapted to each specific organizational context, should be transparent and include alignment processes. Ross et al. {Ross 2006} have concluded that top performers that have a well established enterprise core foundation are more successful and spend 25% less on IT.

32. Ross et al. conclude their book with some remarks that having communicated a core foundation is not sufficient for achieving a top performance. Also leadership is required to accomplish success. Here is the list which was suggested as a means of becoming a top performer:

- Strong organizational discipline: communicate and pursue the foundation;
- Drive the choice of the operating model and be involved in the articulation and conversion, directly and via reinforcing governance. Rectify forces against the vision;
- Allow for experiments next to the core foundation to learn the capabilities of new technology. Establish budgets for experiments;
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- Ensure driving benefits from the core;
- Do not skip stages in the architecture learning;
- One project at a time to build the core gives the staff the possibility to absorb the capabilities;
- Focus on outsourcing in the future;
- Embed learning in the normal project activities and professionalize your people. Especially post-implementation reviews are very effective;
- Adapt the bonus structure towards the building of enterprise core foundation;
- Empower employees to make decisions, provide clear objectives or guidelines for behavior and powerful systems.

Discussion

33. We have argued that three types of interaction can be distinguished in the field of business and IT alignment: strategic alignment, business application development and IT operations. Within these networks different stakeholders and disciplines have to be aligned. Ross et al. have proposed that in order to identify what your company wants to be good at, determine the operating logic based on four recognized patterns, assess the rules of engagement in an IT engagement model and show leadership by senior management. Since I have applied these frameworks myself in two projects, I may comment on their value. The Enterprise Core Foundation is a proven simple and practical way to give guidance to the development of initiatives. Also the five decision-making domains and governance styles have provided a good and practical framework for aligning the diversity in business and IT.

34. Based on this empirical research the following factors can be identified for the interaction governance model:
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a. visualizing the operating model provides an approach for managing dependence, while the enterprise core foundation defines the business process standardization and business process integration (dependence);

b. defining governance style (group domain);

c. introducing an engagement model (structure);

d. establishing an architecture maturity model for business IT alignment (learning);

e. communicating and pursuing the direction, being involved in direction setting, allowing for experiments, driving benefits, learning awareness, embedding learning in operations, establishing reward mechanisms and motivation (all provide factors for the leadership domain).

Flexibility

35. Why is flexibility an important aspect of governance? Markets demand a wide variety of customized and personalized services. Technology changes rapidly. Business models change frequently.¹⁸ This makes flexibility a topic for most organizations. How can managers cope with these dynamics when it would take 9-18 months to carry out major transformation? How can a business survive if your competitor’s time-to-market is a fraction of yours? A logical reaction is to respond with flexibility. But what does flexibility mean for organizations? What is flexibility? To get a better understanding we can draw on Volberda’s research. He has investigated this topic extensively and applied it in practice for more than 10 years.

¹⁸ One of the CIO respondents noted that his company had changed their business model 4 times in the past two decades.
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36. Volberda has integrated several theories to get a better understanding of the flexibility concept, and to develop a model and method for improving organizational development. (Volberda 1992) He has identified four strands of theory that deal with organizational flexibility. In strategic management it is seen as an asset in situations in which anticipation is impossible and strategic surprise likely. In the dynamic contingency theory, the second strand, flexibility is regarded as an organizational potential for maintaining a dynamic fit between the environment and the organization. Organizational learning theories refer to organizational flexibility as a reflective capacity concerning the organization’s learning system for creating a process of dynamic balance. In theories of innovation and entrepreneurship organizational flexibility is judged as an organizational ability to facilitate entrepreneurial activities and innovations.

37. These streams fit well with the concept of interaction governance. The strategic perspective fits well with the “transformational frame”. Contingency fits well with the intervention “managing dependence”. Organizational learning fits well with “managing learning”, and innovation fits well with the “interaction”. All theories provide guidance for leadership. Volberda’s findings are expected to contribute to the model for interaction governance.

38. Volberda has identified three types of strategic theories which contribute to the concept of flexibility: planned strategies;
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preparedness strategies; and strategies of context. He argues that the linear model – if management perceives flexibility as “quickly developing plans” – is no longer tenable. And, he concludes that in a turbulent environment strategic management is predominantly a question of organizing and creating context. Subsequently from the strategic perspective organizational flexibility can be perceived as the capability to respond to surprises and initiate novel actions.

What characteristics of strategic management fit best with interaction management? The interpretative model of strategy – as described by Volberda - fits well because it focuses on motivating people to behave in a concerted way. It conceives flexibility as an imaginative capacity for creating frames of reference broad enough to encourage strategic initiatives.

39. Then Volberda continues with three theories dealing with the organization-environment relation, in particular static contingency theory, population-ecology theory and dynamic contingency theory. These explain the crucial role of the environment in the concept of organizational flexibility. Since we assume in this thesis that interaction in an open system is the basic unit of analysis, as opposed to the organization as an organism, which tries to preserve what it is, consequently, the

19 This view implies a thorough understanding of task environments, transformational frame and context.

20 Besides the fit with the different domains in the model, it also fits well with Simon’s idea that one of the ways to coordinate is to “re-orient beliefs and assumptions of employees”. See chapter 3.1
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dynamic contingency perspective is most appropriate for this research

40. The mutual adaptation between organization and environment is a consequence of the dynamic contingency theory, which considers a proactive and reactive organizational potential for maintaining a dynamic fit between organization and environment. So given a certain environment, the manager should reckon that he may influence the environment through influencing interaction with that environment. He should also be aware that the environment provides him with clues as to what kind of interaction may provide the best results. He should also be aware of the feedback from the environment.21

41. Then Volberda argues that within strategic management and contingency theories flexibility requires organizational potential, created by preparedness and context strategies. However, how can this potential be maintained and further developed? He has identified three levels of learning: single-loop, double-loop and deutero—learning. deutero-learning is a reflective way of learning in order to create adequate balances between single-loop and double-loop learning. In the interaction model learning is also considered as meta-learning. Volberda has identified the object of

21 This view is very similar to the concept of Giddens’ social theory: “duality of structure”. This implies that action by the individual influences the institution which in turn constrains his action. This is further explained in chapter 3.4.
learning as “managing organizational potential” and the means as being “monitoring of learning systems”. These two together may be perceived as a factor to consider in interaction management. Organizational learning theories consider flexibility as a reflective capacity on the organization’s learning system, in order to create appropriate balances between single-loop (detect deviations of existing norms and values) and double-loop learning (ability to adjust the overall norms and values and the rapidity to implement).

42. Finally Volberda argues that organizational flexibility requires organizational potential, created by preparedness and context strategies, which has to be allocated to a proper balance of single-loop and double-loop learning. However, how can we know the outcome of such an allocation of potential? He has distilled two types of flexibility. The first conception of flexibility results in Austrian entrepreneurship, creating an appropriate repertoire of routines in order to alertly exploit presently available opportunities. This approach facilitates incremental innovations.

43. The second conception of flexibility, abandoning routines in order to create new opportunities, promotes Schumpeterian entrepreneurship and facilitates radical innovation. The point is that the process of innovation is conceived as an oscillation between loosely and tightly coupled modes of organization, and that it simultaneously implements these two modes, and balances
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the two types of flexibility. I will consider the two theories - incremental innovation and radical innovation - as frames for interaction. They will be adopted in the learning and in the individual or group behavior domain as well as in the structure of interaction. Depending on the frame that is encouraged, interactions may follow more closely the existing situation, or have a more creative attitude to resolve exceptions.

![Diagram](image)

Figure 13 Relation management capability and organizational design task

44. Volberda has perceived the organization as an actor that can both control and be controlled by the environment. Hence we may attribute him to the school of dynamic contingency theories.  

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22 This view is much like the theory of Giddens on the "duality in structure" and the contextual frame as analyzed by Schön. Both are explained in chapter 3.4.
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From the organizational perspective he perceives the ‘control component’ as the “management capability” on the one hand. The ‘controllability component’ is perceived as the “organizational design task”. The controllability depends on the design adequacy of the organizational conditions as regards technology, structure or culture. These conditions can change when the design is changed. Volberda has found that these conditions determine the degree of flexibility at operational level, structural level and strategic level.

Figure 14 Transformation scenarios to become a flexible organization

(Source: Volberda 1992)
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45. Strategic flexibility needs a more innovative culture, an organic organization structure and flexible technology. Operational flexibility can also be achieved in a bureaucratic, fixed technological structure and conservative culture. The intensiveness of control capacity depends on the repertoire of flexibility creating procedures. These procedures can be assigned to a strategic, structural and operational domain. Volberda has composed four patterns of organizations in which each has a distinct pattern of flexibility: the rigid organization, the planned organization, the flexible organization and the chaotic organization. Each pattern shows a distinct mix of flexibility characteristic at strategic, tactical and operational level.

46. From a dynamic perspective transformation from one pattern to the other implies increasing or decreasing flexibility through trajectories of revitalization or routinization. These two directions can be followed to align the flexibility mix with environmental turbulence. Finally he concludes that every situation needs a different mix of flexibility, and this mix can be handled through managing the contradictions in the theories discussed.

Discussion

47. Volberda {Volberda 1992} {Volberda 2004} has shown factors that are relevant for governance in interaction. Strategic management either creates an ambience that promotes creation (leadership) and maintenance (transformational frame) of systems
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of shared meaning, or develops an organizational capacity to respond to surprises and initiate novel actions (structure/dependence). The contingency theory perceives the environment as something that can be influenced (context), hence the belief that mutual adaptation is an effective mechanism for governance. The organization influences the environment and the environment influences the organization (structure). The learning theories have provided managers with the concept of deutero-learning (leadership), that envisages the management of the learning system which consists of single-loop learning and double-loop learning (learning). Finally Volberda has identified a means of creating an ambience for either incremental or revolutionary innovation. Interaction can be managed through creating an ambience for interaction (leadership), either to restrict or to empower during interaction (group). For our thesis the strategic patterns {Volberda 1992} which Volberda identifies are also relevant. They seem very useful in practice for identifying the target characteristics of organizations in a turbulent environment. As tools for interventions he suggests re-vitalization and routinization as scenarios for influencing the degree of flexibility.

Summary

48. Dependence has been an enormous challenge since the dynamics of change started to accelerate. Thompson proposes to resolve the uncertainties by bounded rationality. The three types of
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Uncertainty he distinguished each has their own specific resolution. The concept of the task environment - a way to reduce uncertainty by adopting bounded rationality - is central to his theory. He has recognized that social and cultural institutions are as critical as technology in finding the right boundaries of task environments. However, he did not integrate this aspect in his theory. Lawrence & Lorsch demonstrated that the integration of the different task environments is the single most important factor for the prediction of organizational performance.

49. This gave rise to another challenge: information processing. Galbraith proposed four ways of dealing with information processing challenges. He argued that information processing determines the shape of organization structure. Since the early 90s several approaches have been developed for the alignment of organization structure and information processing structure, predominantly from an IT perspective. However, recently The Open Group has started a working group that has taken up the challenge to build the bridge between organization development practice and IT architecture practice. Two approaches have been recognized to create flexibility in business operations: the service oriented approach (originates from the architecture approach) and the flexibility approach that originates from the organizational development approach. Both claim to resolve part of the flexibility issue. The solutions for flexibility are worthless, if
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governance capability is not prepared to handle this. Therefore, Ross et al have proposed a governance structure for preparing and making decisions.

50. This chapter has provided insights for the structure, dependence, learning and leadership domain. Some reference has been made as to how to deal with the transformational frame and factors or feedback from the context. The latter two domains will be dealt with in the following part of this chapter.
CHAPTER 3_3 SYSTEMS PERSPECTIVE

Introduction
1. Systems thinking can substantially facilitate governance in digital organizations, because Digital organizations are increasingly taking on the character of a network organization. The influence of power and authority is becoming less, and free choice of the parts is becoming more important. Schwaninger {Schwaninger 2005} has explained why the Systems Approach is needed to deal with this complexity and dynamics. He contends that non-systemic approaches usually fail to include the socio-cultural inter-relationships inherent in the organizations with which they are dealing, like Business Process Re-engineering. These tend to look at organizations as a machine system. Structures are re-engineered in these cases. Systemic approaches on the other hand, pay attention to socio-cultural and political aspects. Systemic approaches have a certain superiority over non-systemic approaches, because – when dealing with complex issues – they meet Ashby’s law of requisite variety. This fits well with the investigation we have carried out so far. The influential research of Williamson, Thompson and Galbraith has indicated the importance of the social and cultural institution for governance solutions. However, none of them has

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integrated it into their analysis. What can systems thinking contribute?

2. Schwaninger {Schwaninger 2005} has reviewed the development of systemic approaches and found four foundations for the strand of System Dynamics and the Systems Approach in General. Forrester {Forrester 1961} laid the foundation for System Dynamics between 1961 and 1971, which was consolidated by Dana and Dennis Meadows in 1972. However, there have been other strands that used the systems approach to resolve practical organizational problems. There were important contributions in the field of General System Theory between 1945 and 1986 from Bertalanffy, Boulding and Simon. Foundations of Cybernetics was recorded by Schwaninger between 1948 and 1965 by Ashby among others {Ashby 1964}. For Organizational Cybernetics he identified Beer with four consecutive works between 1959 and 1972.

3. The Systems Approach developed further in two ways, which are both of vital importance for governance challenges: Systems Methodology and Systems Dynamics. Systems Methodology provides managers with a philosophy as to how to approach structural issues in organizational practice. Ackoff and Checkland {Ackoff 1972} {Ackoff 1999} {Checkland, Peter and Howell, Sue 1998} {Checkland, Peter and Howell, Sue 1998} have developed approaches for the development of social systems. Checkland has focused particularly on the development of information systems.
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On the other hand Senge and Sterman {Senge 1992} {Senge 1993} {Sterman 2000} have made the systemic approach operational with the utilization of computers and formal modelling. They have built on Forrester's dynamic approach and provided a tool to force management to think systematically about the dynamics in systems. These two movements are very likely to facilitate the manager in governance practice. What factors can we include in the model of this thesis?

Systems methodology

4. Ackoff and Gharajedaghi are the most important authors in this strand. Both have put the development and purpose of social systems at the heart of their approach. And, since purpose implies that choice has to be managed, they have focused on factors that influence choice. First we will discuss what factors are relevant for governance in socio-technical systems. In the next paragraph we will discuss the work of Gharajedaghi, who has elaborated the method more explicitly.

Purposeful development

5. Ackoff {Ackoff 1999} argues that most of the time solutions to organizational problems are not obvious. He says that an understanding of the behavioral system is needed. The relevance of the understanding of systems for management can be explained. The

23 Also Ghoshal has declared purpose as the one major driver for network organizations. See chapter 3.1.
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performance of a system depends on how its parts interact, not on how they act taken separately. Despite this, most systems are managed in a contradictory way: they are focused on improving the parts taken separately. However, one should recognize that the change of an essential part also affects the performance of the whole. Therefore no part of a system should be changed without understanding its effect on the whole and determining that this effect is beneficial. It follows that a fundamental function of management is to manage: 1) the interactions of those units and individuals for whom they are responsible; 2) the interactions of their units with other units within the organization; 3) the interactions of their units with other organizations or their units in each one’s environment. Such management needs a type of organization that facilitates it, and he argues that the conventional hierarchy does not provide such organizations. Managers need an organization capable of interactive planning. Why?

6. Ackoff {Ackoff 1999} argues that traditional managers have three traditional ways to react to a problem: reactive, inactive or proactive. The reactive approach acts first to identify its cause or source, then tries to remove or suppress it. If successful this undoes the change that produced the problem and returns the system managed to the state that existed before the problem arose. The manager looks back at the problem as well as the gap between the desired state and what has happened. This process is problem
resolution. Inactive managers are satisfied with the way things are: they may not be perfect, but they are good enough. "Don't fix it if it ain't broke". No planning is done, only crisis management. Their

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<td>Reactive</td>
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Source: {Ackoff 1999}

Figure 15 Primary forms of traditional management

objective is to prevent change. A proactive manager anticipates where he wants to be in the future, and plans his way forward through objectives and a strategy. He predicts and prepares. Prediction is more important than preparation, because when the forecast is wrong, no matter how well it is prepared for, the error is generally more serious than the poor preparation for the correct
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future. Forecasting is a major preparation for the the proactive managers and their staffs.

7. Unfortunately, Ackoff continues {Ackoff 1999}, as the rate of change in the environment accelerates and the environment becomes more complex, their ability to forecast accurately deteriorates. Furthermore, he argues that the act of planning already influences the future outcome and therefore a manager should not focus on forecasting, but on creating the future as much as possible. With this theory Ackoff presupposes that the principal objective for social systems is development. (p38), which can be achieved through a new type of management: *interactive management*. (p54)

8. Interactive planning consists of the design of a desired present and the invention or selection of the means for approximating it as closely as possible. While executing the interactive planning the manager has to focus on three domains according to Ackoff: the democratic hierarchy, the multi-dimensional organization and the internal market economy. Gharajedaghi has elaborated a framework and method for the design of social systems, based on Ackoff's theory. His work has been very valuable for our research, because he has developed a comprehensive set of concepts for thinking, analysing and working on social systems in a systemic way.
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Discussion

9. Ackoff in fact combines the idea of hierarchy with a democratic style, the multi-dimensional lateral (or network) organization and coordination of the units as a market. His premise of multi-dimensionality is the major factor that leads to a choice for interactive planning.

Managing social systems

10. What are the characteristics of a social system? Gharajedaghi {Gharajedaghi 1999} (p 83) argues that it is not only its members, but the relationship of its members to one another and to the whole. Some kind of linkage between the elements is presupposed, if the aggregate is to be considered a system. Therefore the point of emphasis is not the existence of the relationship, but the assumptions regarding the nature of the relationship. These relationships in turn depend on the nature of the bonds that link and hold the elements of the system together. In social systems that bond is information, in mechanical systems it is energy. The behavior of parts is different in both system types. In mechanical systems the system operates as long as the parts work predictably and properly. It works if no part breaks down. In information bonded systems this is different. Socio-cultural systems are a voluntary association of purposeful members in which the bonding is achieved by a second-degree agreement, which is an agreement based on a common perception.
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11. Gharajedaghi (Gharajedaghi 1999) argues that to define the essential characteristics and assumptions about the behavior of an organization, we need a systems language that consists of two dimensions: the framework for understanding the nature of social organization, and the operational systems methodology, which provides a practical way to define problems and design solutions. First the framework of systems concepts is built. His view will certainly provide our research with factors or assumptions that give managers guidance in governance practice. Gharajedaghi has built on the work of Ackoff: On Purposeful Systems (1972). He distinguishes five system principles and five system dimensions. The principles that determine the behavior of a system are: openness, purposefulness, counter-intuitiveness, emergent property, multidimensionality. These principles should not be seen as separate properties, but as acting together as an interactive whole. The outcome of a system is described by the five system dimensions, which form a comprehensive set of variables that collectively describe the organization: wealth, truth, beauty, values and power. The five principles and five dimensions are the factors that have to be included in management practice. In our model the principles and dimensions are part of the Transformational Context that influences the interaction domain. We will briefly discuss them and investigate whether they should be explicitly included in the framework for interaction governance.
12. The first principle is openness. Openness means that the behavior of a system cannot be understood without understanding the context of its environment. Gharajedaghi argues that we can divide everything into two categories: those elements that can be controlled and those that cannot be controlled. This definition makes a distinction between system, environment and system boundary. This has made the system a subjective construct. However, there is also one of Gharajedaghi's categories which distinguishes control from influence as such: control means that an action is both necessary and sufficient to produce the intended outcome; to influence means that the action is not sufficient, it is only a co-producer. Since our knowledge about the environment has increased very much, there is a set of elements that can be influenced. They form a new region called transactional environment. Governance in action should adopt this as a premise. Organizations are like networks. Boundaries of organizations are not clear anymore. Power and influences cross boundaries based on the structural aspects of systems. The transactional environment is part of the object of managers in digital organizations. They have to determine the scope of their influence by understanding the system they are part of.

13. This region - transactional environment - becomes significant in understanding the behavior of an open system. Then Gharajedaghi continues to notice that slowly we come to realize that we do not
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actually control much of anything, but do have the ability to influence many things. Managing is therefore more and more about managing the transactional environment, that is managing upward. Leadership is therefore defined as the ability to influence those whom we do not control, and appreciating what we cannot influence. Finally he argues that open systems display characteristics that are most significant to our understanding of their behavior. Open systems preserve their common properties as well as guard their individualities. This is determined by the culture of a system. This is like the genetic coding, which is a blueprint for self-reproduction.

14. Purposefulness is the second system principle, Gharajedaghi explains. Purposefulness is the characteristic of a behavioral system that has a choice of means and a choice of ends. Choice is the product of interaction between the emotional, political and cultural dimension. Rational choice is the domain of self-interest, or the interest of the decision-maker, not the observer. Emotional choice is the domain of beauty and excitement. We do lots of things because they are exciting or challenging. Culture defines the ethical norms of the collective, of which the decision-maker is a member. However, by dictating the default-values, culture has a profound impact on the decision process. The ethical norms are the constraining elements of the decision process. Purposeful systems are value-guided systems.

15. Gharajedaghi further argues that the characteristics of the purposeful system can be understood by appreciating the difference between
reactive, responsive and active systems. A state-maintaining system is one that reacts to changes in order to maintain its state under different environmental conditions. A goal-seeking system is one that can respond differently to different events in the same or a different environment, until it produces a particular outcome (state). The production of this state is its goal. A purposeful system is one that can produce not only the same outcomes in different ways in the same environment, but also different outcomes in different environments. Purposeful systems have all the characteristics of self-maintaining and goal-seeking systems. Since in this thesis, the researcher appreciates social systems as the object of governance, purposefulness is a key concept. This in turn implies that choice is a derived factor that has to be influenced. This in turn puts focus on emotional, political and cultural aspects which need to be included.

16. Multidimensionality is the ability to see complementary relations in opposing tendencies and to create feasible wholes with unfeasible parts. In the majority of cultures, a fallacy has dominated the treatment of opposing tendencies as a duality in a zero-sum game: security versus freedom; collectivity versus individuality; modernity versus tradition, art versus science. They are cast in such a way that a win for one is a loss for the other. In the context of a zero-sum game, opposing tendencies are formulated in two distinct ways: conflicting tendencies and opposing tendencies. The conflicts are treated as dichotomies. This represents an or relationship. The
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second is the opposing tendency, which seeks a compromise somewhere on the continuum. The compromise point is however, an unstable mixture. The mutual interdependence of opposing tendencies is characterized by an *and* instead of an *or*. Using a multidimensional representation, one can see how the tendencies previously considered as dichotomies can interact and be integrated into something quite new.

![Table](image)

(Source: Gharajedaghi 1999)

Figure 16 Example of multidimensionality

17. Gharajedaghi argues that seemingly opposing tendencies can be perceived as multidimensional. If this is done the new totality will have characteristics of its own as the result of not wanting to

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compromise. In the figure on the behavioral pattern of multidimensional systems below, the result is positioned in the high/high quadrant. Gharajedaghi has based this insight on the work of Churchman (1979), Boulding (1968) and Ackoff (1978). For this thesis concept of multidimensionality provides a premise that clarifies either actual behavior or visualizes the alternatives for present behavior. This is explicitly a key factor to frame leadership.

18. Plurality is complementary to multidimensionality. {Gharajedaghi 1999} A car for example may, in addition to having a mere transportation function, also define the lifestyle of its owner. Gharajedaghi argues that for the entrepreneur, the organization might present a lifetime challenge to create a winning system; however, for the professional corporate citizen it might be the platform for an internal power game. Indeed organizations have multiple functions for dissiminating wealth, power and beauty. Still, corporate actors, depending on their mindsets or the roles assigned to them, consider only one of these functions as primary. This is the fallacy that results in successful operations, but dead patients.

19. Then with plurality of structure Gharajedaghi really explains the complexity of reality very well: .....”Human beings display a similar < the ability to combine with itself, like hydrogen and carbons can enter into various combinations and relationships, resulting in multiple structures> tendency. They form varying relations with each other, creating an interactive type of structure, a social system. Interactions between purposeful actors in a group take many forms. Social actors may cooperate on one pair of tendencies, compete over others, and be
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in conflict over a different set, all the time and therefore variable and subject to change. The result is an interactive network of variable members with multiple relationships, recreating itself continuously. This is what is meant by plurality of structure."..... p44 {Gharajedaghi 1999}

20. Also the plurality of processes is an important insight for managers. The classical principle of causality maintained that similar initial conditions produce similar results, and consequently, that dissimilar results are due to dissimilar initial conditions. However, Bertalanffy (1968) and Buckley (1967) have demonstrated according to Gharajedaghi that social phenomena can also be studied as the end result of a set of interactive processes. This insight has consequences for the process of inquiry, and is essential for understanding the concept of emergent property. In the framework for governance, plurality fits well in the structure of interaction. And, it is something to be enacted for by a leader.

21. Emergent property is the property of the whole, not the property of the parts, and it cannot be deduced from properties of the parts. However, emergent properties are a product of the interactions, not a sum of the actions of the parts, and therefore have to be understood on their own terms. In systems thinking emergent property is called a type II property by Gharajedaghi, as opposed to type I properties. Type I properties express the independent properties of a system: color, surface, material. Type II properties express the interdependent properties: love, happiness, success,
failure. They cannot be deduced from the properties of its parts, or measured. Gharajedaghi reasons that the emergent properties are the product of interactions among several elements, which signifies a dynamic process producing a time-dependent state. Therefore the emergent phenomenon is being reproduced continuously online and in real time. Happiness, success and life are not one time propositions; they have to be reproduced continuously. The Emergent property and interdependent properties visualize the performance and results of governance.

22. The fifth system principle explained by Gharajedaghi is counter-intuitiveness. It means that actions intended to produce a desired outcome may, in fact, generate opposite results. To appreciate the nature of counter-intuitiveness, one needs to understand the practical consequences of the following assertions: cause and effect may be separated in time; cause and effect can replace each other; one event may have multiple effects, which impacts may shift over time; the same effect may be produced by different sets of variables. This principle in system thinking is important for the way problem resolution is approached.

23. Gharajedaghi's last step in explaining the design of a business is to understand how to get a handle on the production of success, development or happiness. However, in order to do this we need to understand the processes that produce these emergent properties. He argues that only five parameters coproduce the future of a social
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system. These form a comprehensive set of variables that collectively describe the organization in its totality: wealth, truth, beauty, values and power. Wealth refers to the production of necessary goods and services and their equitable production. Truth refers to the generation and dissemination of information, knowledge and understanding. Beauty refers to the emotional aspect of being, the meaningfulness and excitement of what is done in and of itself. Values refer to the regulation and maintenance of interpersonal relationships such as cooperation, coalition, competition and conflict. And, power refers to the legitimacy, authority and responsibility or, in general, the notion of governance.

24. These five dimensions have not been identified in order to treat them separately, rather they have been identified to emphasize their interactions. It is quite feasible to identify any four of the five variables to explain the fifth. The organizational processes illustrate how interactions between the variables are organized and executed. Gharajedaghi further argues that the main function of a business is to produce the throughput, or in general terms to generate and disiminate wealth. It is the effectiveness of this process that ultimately results in success or failure. However, an effective throughput cannot be designed independently of organizational processes that provide the platform and infrastructure for its operations.
25. The systems theory of organizations, according to Gharajedaghi, maintains that the major obstructions in developing multiminded systems are the results of a malfunction in one or all of the five dimensions. Design parameters and characteristics of organizational processes are basically defined by assumptions and imperatives of the dominant culture or paradigm in use for each organization. Once in place they act by default, rather than by active governance. They will also remain intact during the ups and downs of technological change.
Discussion

26. Gharajedaghi's ideas and concepts fit well with the idea in this thesis to manage interactions instead of actions. He argues that if success is an emergent property, and emergent properties are the result of interactions and these produce properties that are not present in the parts of the system, then interactions have to be managed, rather than actions. Emergent properties are also closely connected to the idea that the creation of the right psychological environment is critical for organizational success, as suggested by Simon (Simon 1961). How can one create the right positive atmosphere that enhances the motivation and enthusiasm of its participants? Gharajedaghi shows the logical way to do this by governing the interactions. He has also shown that this is a continuous activity which never stops because interactions produce the result, and interactions never stop. Therefore we may conclude that as long as interactions continue to exist, governance is required. We still have the problem of measuring the impact of governance of interaction. If an organization is successful, it may grow. However, if a company does not grow it may also be successful. Growth is not a good criterium for measuring success. Gharajedaghi suggests therefore always measuring more than one manifestation.

27. Another insight demonstrated by Gharajedaghi's exposé poses choices at the core of governance. Stakeholders always act in circumstances of opposing tendencies. Examples are work/life
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balance, unit/corporate interests or standard/bespoke solutions. Choice determines the result of interactions and hence the behavior of the whole system. Therefore influencing the choice of the individual should be at the heart of governance practice. Choice can be influenced through the individual, but also indirectly by creating the right conditions for an interaction. Senge has elaborated the act of governance as indirectly influencing individual and system behavior.

System Dynamics Approach

Introduction

28. Forrester {Forrester 1971} has emphasized the approach of rationality and he develops it into a more positivistic approach. He argues that results of policies often fall far short of expectations. This is because dynamic behavior is not understood. Fundamental reasons cause people to misjudge the behavior of social systems. Orderly processes in creating human judgment and intuition lead people to wrong decisions in complex systems. The System Dynamics approach has developed several ways to deal with this phenomenon.

Computer models

29. Three counter-intuitive behaviors of social systems are especially dangerous according to Forrester. He argues that human intuition develops from exposure to simple systems. In simple systems the cause of trouble is close - in both time and space - to symptoms of
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the trouble. However, in complex dynamic systems, causes are often far removed in both time and space from symptoms. While true causes may lie back in time and arise from an entirely different part of the system from when and where the symptoms occur.

30. Second, social systems seem to have few sensitive influence points through which behavior can be changed. These high influence points are not where most people expect. Contrary to intuitive expectations, the opposite of present practice may resolve current problems (example world-wide development). For instance social systems exhibit a conflict between short-term and long-term consequences of a policy change. Many problems being faced today are the cumulative result of short-term measures taken in previous decades.

31. However, in response Forrester offers new methods that lead to a better understanding of social systems and thereby to more effective policies for guiding the future. He also argues that the human mind is not adapted to interpreting how social systems behave, and proposes a method to overcome this dilemma. He believes that computer models can be very helpful for acquiring a better understanding of social systems. Both Senge and Sterman have developed Forrester's ideas into a widely recognized approach of System Dynamics \cite{Sterman 2000} \cite{Senge 1993} \cite{Senge 1992}.
Learning Organizations

32. Senge positions himself as a real system thinker. He \{Senge 1990 (1994 paperback edition)\} argued almost 15 years ago that since learning was becoming a cornerstone of future organizations, organizations had to become learning organizations. And, a learning organization is continually expanding its capacity to create its future. For such an organization, it is not enough merely to survive. Survival learning, or what is more often called “Adaptive Learning” is indeed necessary. But for a learning organization, “adaptive learning” must be joined by “generative learning”, learning that enhances our capacity to create. In The Fifth Discipline Senge has explored the key capabilities of the learning organization.

33. In this book he calls Systems Thinking the fifth discipline required for a Learning Organization. The other disciplines that complete the set of capabilities for a truly learning organization are: personal mastery, mental models, building a shared vision, team learning. In personal mastery Senge explains his drive to understand the connections between personal learning and organizational learning. \{Senge 1990 (1994 paperback edition)\} Mental models are deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action. Building the shared vision enables people to excel and learn, not because they are told to, but because they want to. Team
learning is about learning how to recognize the pattern of interaction in teams that undermine learning.

34. In an article on change in the practice of management, Senge explains the differences between traditional companies and the knowledge-based company. They differ at least in four different aspects: direction setting, thinking and acting, the nature of thinking, conflict resolution and the role of leadership. Key in a knowledge creating company is that direction setting takes place at different levels. The traditional company sets direction at the top. In the knowledge-based company management is responsible for managing the process of moulding emerging visions into a shared vision, which involves communication, assessment, and the ongoing process of building on the ideas of one another. Official messages play a key role. They must be exciting, and a little ambiguous, otherwise they become more like an order. *Thinking and acting*: in traditional organizations, the top thinks and the local acts. The top thinks, designs effective control systems, to translate management insights and directives into coordinated organizational actions. However, this is simply not possible anymore because of interdependency and accelerating change. Professor Shoji Shiba of Tsukuba University, architect of the Centre for Quality Management has coined the phrase: “integrate thinking and acting at all levels”. (see also {Lee 1999}) Based on quality management experience Senge describes a process as: the circle from exploration
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to standardization and back, keeping the organization in a constant state of renewal through integrating thought and action.

35. Nature of thinking: in the resource based company people have to understand their job and what is expected of them. How their job interrelates with others is not their concern. There is “someone up there” who will figure out how all the pieces fit together. In the knowledge creating company more notion of system thinking is required. Local actors have to better understand the impact of their actions on others in the system. They also need learning tools and better information. Conflict resolution Many different mental models lead to different learning moments. Traditionally managers have been trained to become problem solvers. When a problem is too complex, a manager has to accept that he cannot solve it. This often leads to defensive reasoning. Argyris has argued that teaching people how to reason about their own behaviour in new and more effective ways breaks down the defences that block learning. The goal must be to build shared mental models, rather than simply battling to see whose mental model triumphs.

36. Role of leadership Leaders in traditional organizations worry about few issues more than how to motivate people. But, as Deming asserts, “people are born with intrinsic motivation”. Hence the issue is not to motivate, but how to empower them. The problem is caused by the failure to distinguish motivation from inspiration. Leaders inspire commitment. This includes the work of designing
better organizational structures, which is more than having learning structures well in place.

37. Elsewhere Senge argues that developing systems thinking is the primary objective for leaders in the more creative, non-authoritarian organization. Leaders can do this by focusing on the system principles universal to all systems and the "generic structures" and management principles critical to organizations. A necessary characteristic of effective leadership is the willingness to tackle important problems. He appreciates that these seldom disappear by simply manipulating symptoms. Whereas system principles help to understand the system's behavior.

38. Senge {Senge 1986} proposes five systems principles. 1) In complex systems, obvious solutions often fail to produce intended results. – in fact, they often exacerbate the very problems they are intended to resolve; 2) In complex systems, cause and effect are generally not closely related in time and space. As managers, we typically assume they are; 3) Complex systems tend to resist attempts to change their behavior. The most common cause of policy resistance is multiple "compensating feedback" relationships that attempt to maintain internal balances despite external interventions; 4) Effective policy design requires understanding an organization and its environment as a unified system, so as to shift management attention away from the large number of low-leverage policies to the relatively few high-leverage points; 5) Such understanding requires an ongoing
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management education process. The objective of this education is to shift the style of thinking within an organization. In an organization intent on realizing its creative potential, fostering systems-thinking is a chief function of leadership.

39. Senge argues that "generic structures of systems" is another key concept for leaders: "...Our belief is that a relatively modest number (well less than 50) of generic structures will capture a significant portion of the dynamics of all organization growth and stability. For a given firm, the number of critical generic structures is undoubtedly smaller." {Senge 1986} p156 Promising in this respect, is the work of Eric Wolstenholme. {Wolstenholme 2003} {Wolstenholme 2004} He has identified four generic archetypes: underachievement archetype; out of control archetype; relative achievement archetype and relative control archetype. Each archetype describes generically the pattern between "action to achieve intended outcome", "outcome", "system reaction" and the "system boundary". The application of these archetypes may help leaders to accelerate understanding of the system behavior. He has experimented with it recently, and discussed the impact on the boundary concept of systems.

Changing Management Practice

40. Senge {Senge 1993} has also made systems thinking operational in quite a simple way by identifying the categories of factors that managers should take into account. We should remember that he aimed at linking individual learning with organizational learning.
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And in this respect his findings are particularly important for this thesis. He has operationalized the link between the Transformational Frame and individual behavior. To do this he distinguishes four categories: philosophy, attitudes and beliefs, skills and capabilities, and tools.

41. Philosophy "Good ideas drive out bad ideas". This is a statement of the CEO of Hanover Insurance William O'Brien. The problem with most companies is that they have no good ideas. And Senge continues that since we have now met the lower needs of the Maslow's pyramid, we need organizations that meet the higher order needs: self-actualisation and self-respect. This should be included in the philosophy. This should include what the company stands for, and where it is going, including a sense of place. What matters is what philosophy is lived, not what is preached. Therefore guiding ideas must eventually be matched by new capabilities consistent with philosophy. Senge has distinguished the following factors: vision, values, purpose, sense of place. Attitudes and beliefs

Three levels of culture can be distinguished: tangible (dress code, office spaces etc), values and espoused philosophy (often focused on by consultants), and basic assumptions, what people really believe, and attitudes that people are largely unaware of. The third category is the most important one. Culture of a knowledge organization: what would the deep beliefs, assumptions of an organization with a truly learning-oriented culture be? What attitudes does it need? The
counter productive basic beliefs cannot be assaulted directly. They have been developed over a long period of time. A guiding philosophy can help, but people also need skills. Thus the process of building a learning organization must also focus on developing the necessary individual and collective skills and capabilities.

42. **Skills and capabilities** What are the basic skills and capabilities of a learning organization? One basic skill is the capacity to reflect on and articulate personal vision. Another one is to articulate people’s perception of reality. The natural complement to vision is system thinking which aids understanding interrelated events and aspects. However, it should be applied to restructuring our mental models. “Systems thinking” is strong and operationalizes only when applied with skill to surface assumptions and to balance inquiry and advocacy. If these are applied collectively they become meaningful and strong, when they are widely shared. **Tools** Buckminster Fuller: “Don’t teach people a new way of thinking. Give them a tool, the use of which will lead to that new way of thinking” Senge: what organizations most need to learn about today is often the interrelatedness of what might previously have been seen as separate problems.

**Discussion**

43. Although Forrester and Ackoff have been founding members of the systems thinking approaches, Senge/Sterman and Gharajedaghi have operationalized system thinking. Based on the operationalization
Senge and Sterman have developed a systemic way to bring to the surface hidden assumptions and to model them. Philosophy, attitudes and beliefs, skills and capabilities, and tools are all four relevant factors for management. Sterman has developed this approach further. He utilizes the modelling of stocks, flows, valves, delays and feedbacks to describe the behavior of a system. This enables modelling, and enhances the opportunities to simulate system behavior with support of computers. Since the early 90s many models have been built and these have demonstrated the behavior of systems. {Rouwette et alia 2002} {Gonçalves 2003}

44. Gharajedaghi has connected the individual choice to system performance, and in this way he connects influence and feedback from the environment indirectly to system performance. Furthermore he discusses the controllable and transformational frame as a view for managers. On the other hand Senge has elaborated system thinking by comparing it to the traditional approach of managers. Key governance aspects of his approach are: motivation/inspiration; job understanding versus practical knowledge how to interact. He also emphasizes the importance of the process as a factor of management. His contribution is that the transformational frame becomes more explicit in the governance model. Furthermore he has provided insights that are elaborated further by Wolstenhome in finding four generic archetypes. These
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may provide an aid for managers to understand why structural change may be or cannot be obtained.

45. Overall systems thinking has provided insights that are paramount for managers in a digital world. First we have seen the structure of organizations change in a way allowing social dynamics increasingly more room. This is one of the major challenges for which systems thinkers provide approaches. Furthermore the relation between individual, organization and environment has been clarified by systems thinkers. The transformational frame is a critical part of this connection, and should therefore be included in a manager’s practice. Senge has furthermore provided insight into the difference between the traditional organization and the knowledge company. The basic ideas are to put more emphasis on the process and the interaction of each individual rather than on specific jobs. If these views are translated into management practice, the result is four categories which can be focussed on in order to connect individual behavior to the transformational frame: philosophy, attitudes and beliefs, skills and capabilities, and tools.

46. What parts of the model have so far been supported by the literature review? Structure and dependence got ample attention in the first two parts of this chapter. Also group received sufficient attention in the first section while discussing the network organization. The connection to the transformational frame has been supported, but not yet as specifically as in this section. In this chapter the
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correlation between group, individual and transformational has been supported by an elaboration of learning as intervention and a tool to get a grip on social dynamics. What has not yet been sufficiently elaborated is the view of the individual. How can a manager perceive individuals, and how can he influence the individual in order to enhance the performance of the organization?
CHAPTER 3.4 SOCIAL PERSPECTIVE

Introduction

1. The reader may ask by now whether the manager is part of the object of governance, or not. In this section the argument deals with the social system as an object, first to understand its dynamics. {Giddens 1984} {Giddens 1976} {Giddens 1979} Then we will explore the transformational view of that system, {Gergen 1994} and finally we consider the managerial part of the social system. {Schön 1983} This approach hopefully matures the researcher’s ideas from awareness (what kind of object do we observe?), to insight (how does this object evolve?) and practical experience (how can a manager influence this evolution?). Finally factors will be identified that are considered relevant for the model of Interaction Governance.

2. Systems thinking has taught us that properties of interaction between the elements make the difference, and not the properties of the elements themselves. Based on early investigation during this PhD study {Hendrickx 2003} we have also adopted the premiss in this thesis that interaction has three domains that form a holistic whole: individual, structure, group behavior. The individual can make choices and groups do have written and unwritten rules. A third premiss is that we have divided the environment of action into
two different domains: transformational frame and context. The environment influences interaction during an encounter. If these are the starting points for governance, how can we influence the effectiveness of interaction. To understand this we have to understand how these three domains depend on each other. For a better understanding of social systems Giddens will be studied. Gergen is included in this chapter because he has analyzed the transformation of social systems at large, and Schön contributes by giving insights derived from empirical study of relationships.

3. Giddens \{Giddens 1984\}\{Giddens 1976\}\{Giddens 1979\} has developed a theory that explains the interaction, and the outcome of interactions between individuals and groups, and between groups. He argues that the production of society is an ongoing process that never stops because interactions do not stop as long as human beings are together. Giddens provides a framework for understanding the social dynamics well. On the other hand Gergen \{Gergen 1994\} provides a theory on transformation from one social situation to another one. If we assume that beliefs and assumptions, and cultural factors are critical for the behavior of individuals and groups, we have to find ways to influence these.

4. Gergen proposes the social constructionism as a means for transformation to different outcomes. He argues that individuals are not the locus of knowledge – or, reality –, but its locus should be sought in the relationship. Consequently reality may be changed by
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transforming relationships. What is the logic Gergen exposes? It is expected that he provides insights that shall make the interaction governance model more comprehensive. Deliberate transformation is where the research of Schön fits perfectly well. He has empirically analyzed what can influence the relationship between the professional and patient, professional and client, manager and staff. He has analyzed the dilemas that arise in practice.

5. This chapter deals first with the reproduction process (Giddens), then with the active transformation process (Gergen) and finally with the manager’s effective attitude (Schön) in action.

6. In literature review little attention has been paid so far to the role of the “individual”. Only Simon {Simon 1961} has dealt with the individual more extensively, Achrol {Achrol 1997} dealt with it also but to a limited extent only. Systems thinkers have paid more attention. {Ackoff 1972} {Checkland, Peter and Howell, Sue 1998} {Gharajedaghi 1999} {Senge 1992} {Senge 1993} Systems thinkers deal with the individual as an actor having choice that can influence courses of action. The authors investigate the triggers and causes of choice, and try to link the unconscious to the conscious world.

7. To complete the literature review more insight is needed on the individual and group dynamics, because this is the center point of
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action. 24 Once this analysis is completed the foundation for the synthesis of a model for Interaction Governance in social systems is complete, and the synthesis for "Potential Practice" can start in the next chapter.

Social System Dynamics

8. Social systems are in a continuous movement. Action is the lowest level of movement, which results in properties of the social system. The manager should understand this process, because he wants to make a difference in such a process. Giddens has developed the theory of "the constitution of society". Since organizations can be perceived as societies it is appropriate to include this in this investigation. First we will discuss Giddens’s conception of action, then his conception of institution, next the duality of structure and certain properties of social action.

On action

9. Giddens {Giddens 1976} argues that the Wittgenstein 'philosophy of action' is underutilized. Anglo American authors have a lack of concern with social structures, with institutional development and change. The problem cause is that these have not been able to discern the following five related questions: how can we formulate the concept of action or agency; how to connect the concept of action

24 Even the human being is the center point of action in an interaction between two computers that act in an organizational system. These computers have also been installed by humans, either deliberately or unaware of certain implications of their own culture or assumptions and beliefs.
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and that of intention or purpose; how to characterize (identify) types of acts; what is the significance of reasons and motives in relation to agency; what is the nature of communicative acts.

10. He argues that this omission is partly due to the ambiguity for which agents are deemed responsible. The borderline is not clear-cut. Some may deceit or manoeuvre so as not to be held responsible or as to claim a certain outcome as an accomplishment of their own. In legal theory one may be held responsible, or culpable if he 'should have known': “agency = moral responsibility = context of moral justification". This implies a connection between agency, agent and the context of agency. Giddens argues that not movement should be the reference for action, but the person, the acting self. However, if we agree on this it means that action can not be observed, like a movement. Or described like one. Action includes then also processes, inference, or 'interpretation'. How does Giddens conceptualize action?

11. He defines action or agency as the stream of actual or contemplated causal interventions of corporeal beings in the ongoing process of events-in-the-world. The notion of agency connects directly with the concept of Praxis. Human practices are a series of regularized

25 This supports the view that outcomes have to be considered in the cultural context in which it is accomplished.

26 In my view the notion of Praxis is a very powerful concept for the profession of architects of organizations. It is very underutilized because that profession is still under development, and did not yet integrate the social dimension sufficiently in their methods.
practical activities. This implies two things: could have done otherwise, and not being pre-deterministic on what the future will bring. However, some cognitive awareness of possible courses of action is involved. Actions are 'intentional' or 'purposive'. Every day-to-day action is also included in purposive: any act which an agent knows (believes) can be expected to manifest a particular quality or outcome, and in which knowledge is made use of by the actor in order to produce this quality or outcome. However, the agent is not always aware of the knowledge, and is not always capable of formulating that knowledge.

12. This reasoning has several implications. Purpose can be dislocated from agency, is one implication. Another one is that the most important symptom of agency is "unintended consequences of intended acts", because the agent cannot know all consequences or relevant knowledge to the situation. This dislocation is also important in the reproduction of structure, or the hierarchy of purposes. This aspect will be dealt with below more extensively.

13. Another aspect arises first: the nature of act-identification. In his analysis Giddens {Giddens 1976} asks himself several questions in order to get acts and agency visualized. How can acts be identified? How can acts be described or visualized? How can we express the difference between object (act) and its meaning or characterization? How can acts be rationalized: purposes or intention, reasons, motives? The object or event just happens. The characterization of
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	he event depends on firstly the interests that trigger the enquiry, and secondly the knowledge that the person possesses. Many different characterizations can be given according to differences of the knowledge. All might be true, but no single one which is simply correct, the others mistaken. It all depends on the circumstances in which the query comes about. The same thing holds in the human act. When an enquiry about an event happens, many different answers are possible. This depends on the circumstances the actor is involved in. Although many different characterizations of an act are possible, only a few will be appropriate. Observing and describing acts becomes a peculiar skill. Picking up the right one is a subtle skill which actors master during participation in every day interaction. 27

14. In the work where Giddens integrates his notions on the The Constitution of Society {Giddens 1984} he argues that structuration theory is the study of social practices across space and time, and that human social activities are recursive. They recreate their social activities and reproduce the conditions that make these activities possible. In that study he distinguishes reflexive monitoring, rationalization of action and motivation of action. If these aspects can be described, action can be described. In the rationalization of action Giddens asks himself what the distinction is between 'purposes', 'reasons' and 'motives'.

27 Architects make a profession of understanding the right context and events and their effect. So far we have seen that the act of an agent is important, interpretative schemes and the circumstances.
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15. He {Giddens 1976} argues that seldom persons have a clear cut end or outcome in mind. The adjective purposive and intentional are more appropriate. The purposive content consists in the continual successful ‘monitoring’ by the actor of his own activity. To enquire into an actor’s purpose is to enquire what ways and from what aspects he is monitoring his involvements. In practice this will not be clear cut, because the day-to-day life does not exist of a string of discrete projects or purposes, but in a continuing stream of purposive activity in interaction with each other. Giddens talks in this respect about ‘hierarchy of purposes’ and activities as concurrent flows that are monitored simultaneously.

16. He continues {Giddens 1976} that what holds for purposes and intentions also holds for reasons. One should speak about reasons only to the background of reflexive monitoring of his conduct. Asking about the rationalization of conduct is to enquire about the logical connection between purpose/intention and the technical grounding of the knowledge that is applied as means. So to say the act is justified by the insight and knowledge that is applied. Thus reasons may be defined as grounded principles of action to which an agent keeps in touch for his reflexive monitoring of behavior. The principle of action has a logic that a certain outcome is expected. So reasons are logically connected to purposive acts. However, motivation is different from reason.

Example: bus driver in Louisiana sends two children at the back of the bus. She gets suspended.
17. From the actors viewpoint these three aspects of characterization can be described as "discursive consciousness", "practical consciousness" and "unconscious motives or cognition". The practical consciousness is related to knowledgeability which is the awareness of social rules. Those type of rules that are most significant for social theory are locked into the reproduction of institutionalized practices. The main characteristics of these rules relevant to general questions of social analysis can be described as follows:

<table>
<thead>
<tr>
<th>Intensive</th>
<th>Tacit</th>
<th>Informal</th>
<th>Weakly Sanctioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shallow</td>
<td>Discursive</td>
<td>Formalized</td>
<td>Strongly Sanctioned</td>
</tr>
</tbody>
</table>

{Source: Giddens 1984}

Figure 18 Characteristics of rules in institutionalized practices

Giddens argues that most of the profound rules - most influential in structuring of social activity - are tacit. Once they are discursive the formulation is already an interpretation of it. And, if they are codified, the type case is that of laws.

18. In summary agents are embedded in a continuous stream of actions; agents deal with these actions within a complex of different frames
of purpose, rational insights (reason), motivations and learned procedures; agents constitute interpretative schemes but also are influenced by interpretative schemes; interpretative schemes are sets of methods and procedures that constitute a certain Praxis; the action gets meaning through the circumstances within which it takes place; action can have different outcomes, intended and unintended. The skill of an actor to have reflexive monitoring of action against insights, purpose(s) and learned procedures influences his action and the intention for outcome. In interaction these factors come in double from agent A and agent B. How does action contribute or constitute institution?

On Structure

19. Giddens {Giddens 1976} argues that many writers discussed the relation between the moral order and action on the one hand and the importance of the actor's purpose and motives for action on the other hand. However these writers do not consider the origin of morals and the origin of motives. How can we explain than the production and reproduction of the action system? Giddens then discusses the fundamental idea of production and reproduction of the social order. Giddens recognizes that production or constitution of the society is a skilled accomplishment of its members. And also, that the key to understand social order is not 'the internalization of values', but the shifting relations between production and
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reproduction of social life by its constituent actors. He argues that the seed of change is in every act which contributes to the reproduction of any ordered form of social life. Furthermore he recognizes the relevance of the capability of human beings to reflexively programme their environment, thereby monitoring their place in it. He argues that this can only be done through language. Language is above all the medium of human practical activities.

20. Since language, he argues, is a means for communication in interaction, 'interpretative schemes' are involved. Not only to make sense of what the other says, but also of what they mean. In the latter language has two functions. It is a medium in the constitution of 'sense' as an intersubjective accomplishment of mutual understanding in an ongoing exchange. Secondly it is a medium to bring the contextual cues, as properties of the setting. Giddens continues that language is not resided in an individual, but is the structure or characteristic of a community of speakers, implying that to study social practice first their constitution as a series of acts has to be understood. Secondly social practice should be analyzed as constituting forms of interaction, involving the communication of meaning. Thirdly social practice can be studied as constituting structures which pertain to collectivities or social communities.

21. Communication and knowledge are critical in the production and reproduction of structures, according to Giddens. The skills of communication, the basis of possibilities of discourse, obviously
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involve knowledge. This is mutual knowledge including tacit knowledge if one is a competent member of society. Mutual knowledge is applied in the form of interpretative schemes, or 'typifications'. Knowledge, mutual knowledge, always plays a role in interaction. However, we have to recognize that mutual knowledge is sometimes taken for granted, but never fully taken for granted. It is always produced and reproduced anew by the actors as part of the continuity of their lives. Three categories of factors figure all at the same time in the production of interaction: moral orders, meaningful and power relations. This means that different worldviews may clash in interaction, or clashes of diverging understandings of common norms. When talking about norms Giddens talks about rights and obligations.

22. A series of moral orders put a claim on realization during interaction. These claims are contingent upon production of interaction. Whether moral orders (rights or obligations) are accepted or not is a choice of actors, and is part of negotiation during the production of interaction. If they are accepted there may be a positive sanction, if not there may be a negative sanction expected or negotiation may arise. The sanction may as well be internal (moral commitment) as external (fear, guilt, anxiety). It is the mixture of these positive and negative sanctions or negotiations that make it count in interaction.
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23. Action intrinsically involves the *application of means* to achieve outcomes. Giddens perceives power as the transformative capacity of human action to achieve outcomes. Power is tight to the capacity of the actor to mobilize resources that constitute those means. Power is the capability of the actor to intervene in a series of events so as to alter their course; it is about the difference of intention or wants and the actual realization of the outcomes sought after. Power may be defined as the capability to secure outcomes where realization of these outcomes depends upon the agency of others. This is power as *domination*. Power refers to *capabilities*. The importance of power is that it can be stored up for future occasions. Power does not mean that conflict exists. It may be, but is not necessary. Power is contingent with conflict. However, power does not imply conflict. Power does not exist because others resist realizing. The linkage of power and interest is the cause that conflict and power often go together. The use of power can best be understood in terms of resources or facilities.

24. The third factor that influences interaction is knowledge. Giddens argues that reflexivity is important in understanding the action. The reflexivity of the actor in fact represents the account of his behavior. He argues that there are two senses in which reasons may be held by actors to be 'valid', and interlocking of these is of no small consequence in social life. One is the by actor stated reasons that express his monitoring; the other is how far his explanation
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conforms to what is generally acknowledged. Here comes in what the actor believes when he states reasons. Also mutual knowledge and commonsense belief underpins mutual knowledge. Also commonsense is somehow derived from expert's knowledge. Knowledge is a stock good, and it is important in what sense the stock of knowledge is corrigible.

25. With respect to production and reproduction of social life Giddens {Giddens 1976} then explains the difference between practices (set of actions) and structure. Practices are situated doings of a subject, can be examined with regard to intended outcomes, and may involve an orientation towards securing a response or range of responses of another or others. Structures on the other hand have no specific socio-temporal location, are characterized by the absence of a subject, and cannot be framed in terms of subject-object dialectic.

26. He continues that functionalism and structuralism do not explain for the constitution of social life as the production of subjects. Functional analysis is not concerned about the whole and the parts, rather with the postulated homeostasis. Giddens tries to resolve this problem by introducing the term structuration: is the reproduction of practices, is the dynamic process whereby structures come into being. The study of structuration is to enquire into the process of reproduction to specify the connections between structuration and structure.
27. Giddens has introduced the “duality of structures”, meaning that social structures are both constituted by human agency, and yet are at the same time the medium of this constitution. Thus in the relations the reproduction of structures come into being. He continues that the locus of the social reproduction is in the immediate process of interaction.

<table>
<thead>
<tr>
<th>Interaction</th>
<th>Communication</th>
<th>Power</th>
<th>Morality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is characterized by communication, power and morality</td>
<td>Subjects communicate a meaning in interaction through the use of interpretative schemes by means of which sense is made by participants of what each says and does</td>
<td>The use of power generates outcomes through the conduct of others by application of facilities</td>
<td>The moral constitution of interaction involves the application of norms from a legitimate order, and yet by that very application reconstitutes it.</td>
</tr>
<tr>
<td>Modality</td>
<td>Interpretative scheme Depends upon a cognitive order which is shared by a community. Application of which reconstitutes that same order</td>
<td>Facilities Are drawn from an order of domination, and at the same time reproduce that order of domination</td>
<td>Norm Are drawn from a legitimate order</td>
</tr>
<tr>
<td>Structure</td>
<td>Signification Structures of signification can be analyzed as systems of semantic rules</td>
<td>Domination Structures of domination can be analyzed as systems of resources</td>
<td>Legitimation Structures of legitimation can be analyzed as systems of moral rules</td>
</tr>
</tbody>
</table>

{Source: Giddens 1984}

Figure 19 Characteristics of social structures
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In any concrete situation of interaction the three aspects communication, power and morality are in effect at the same time. They are an integrated set, rather than discrete components. These three aspects have each their own modality: interpretive scheme, facilities and norms.

28. The result of structuration is an institution. Institutions can have different forms. Three domains have been identified to form the institution: signification, domination and legitimation. Giddens created the concept of modalities of structuration to clarify the dimensions of duality of structure in interaction. In this way he relates the knowledgeable capacities of agents to structural features. However, the separation of the modalities into meaning, normative elements and power can only be made analytically. The very identification of acts or of aspects of interaction implies interlacing of meaning, normative elements and power. All three domains are as important.

29. With this account Giddens has developed a framework that provides means for a better understanding how knowledgeability is connected to structure. This illustrates the process of structuration. However, what still remains to be studied is the position of the personality. How does Giddens connect the agent to structure?
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Agent, Interaction and Structuration

30. Giddens argues that the time-space location of the body brings all factors relevant for the effect of interaction together. He also argues that some understanding is required of the processes taking place during interaction with the individual. In this part of the analysis, Giddens (Giddens 1984) is mostly interested in the connection of the unconscious with the outside world of social actions. He argues that consciousness is a property of an agent, and the 'I' and the 'Self'. The consciousness of the 'I' refers to the awareness of the corporal person within the outside world. The 'Self' is reflected in the consciousness. The 'I' is an essential feature of the reflexive monitoring of action but should be identified neither with the agent nor with the self. The 'I' has no image, as the self does. The self, however, is not some kind of mini agency. It is the agent as characterized by the agent. It is the sum of those forms of recall whereby the agent reflexively characterizes 'what' is at the origin of his or her action. The self is the agent as characterized by the agent. Self, body and memory are intimately related. Agent on the other hand is the human subject located within the corporeal time-space of the living organism.

31. To understand governance the distinction between 'Practical' consciousness and 'Discursive' consciousness is also appropriate. Practical consciousness refers to the awareness of one's circumstances related to one's activity. Discursive consciousness is
the consciousness that presumes that the agent can give a coherent account of one’s activities and the reasons for them. He is able to put things into words. Unconscious refers to not able to put things into words. Both can be identified as something that can be influenced in several ways. Practical consciousness can be influenced by increasing the awareness of the game in a specific social context. Discursive consciousness is more related to what an individual believes or assumes, or what his own motives are. The motives are very difficult to influence, the beliefs and assumptions can be changed or developed more easily.\textsuperscript{28}

32. Giddens {Giddens 1984} continues that memory and perception are also critical concepts to this respect. Memory is the device of recalling or just refers to the past. Perception is not as an aggregate of discrete ‘perceptions’, but as a flow of activity integrated with the movement of the body in time-space. Thus it has been populated with anticipatory schemata with which the subject anticipates new incoming information. This view illustrates the importance of the notion of perception for managers.

Governance, Presence, Co-Presence

33. In the digital world the word presence has got a completely different meaning than before. When my wife and I left in 1979 for Kenya, we did not know whether we would stay connected to our family

\textsuperscript{28} This insight is related to the Appreciative Inquiry approach as proposed by Cooperrider
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and friends. After 18 months we had the first telephone call with my mother in law. On the other hand when our children nowadays travel to the other end of the world, they often are still daily connected to their friends and family at home. There is no breach in social connection through a continuous exchange of messages and pictures. This has not only changed the character of social development dramatically, it has also changed the potential impact of managers on courses of action. Giddens has analysed presence and co-presence in the light of social integration. This analysis is relevant for governance because organizations become increasingly integrated clusters of domains, value chains or cultures. In a digital world the number of encounters which these different realities meet increases steadily in.

34. Social integration happens when actors meet each other, and have interaction. What are the conditions under which encounters take place? “The routines of day-to-day life are fundamental to even the most elaborate forms of societal organization. In the course of their daily activities individuals encounter each other in situated contexts of interaction – interaction with others who are physically co-present. The social characteristics of co-presence are anchored in the spatiality of the body, in orientation to others and to the experiencing self.” P64 {Giddens 1984} Besides co-presence, Giddens notes also the importance of the unconscious in social life, but he considers this topic beyond the field of his research on the
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production and reproduction of society. Therefore he confines himself to adopt a typology of the contours of interaction, as presented by Goffman. In my view this typology provides also managers with a tool to pre-position social interaction in a context, and gives a handle to influence interaction between two actors in a network of relations. What type of interactions does he distinguish?

| Gatherings | Exchange of 'friendly glances' Greetings in hallway | Refer to assemblages of people comprising two or more persons in contexts of co-presence. Gatherings presume the *mutual* reflective monitoring of conduct in and through co-presence. Aspects of contexts are routinely drawn upon by actors in constituting communication. The importance for the formulation of 'meaning' – one of the dimensions of structuration - can hardly be exaggerated. |
| Social occasion | | Social occasion provides the 'structuring of social context'. Gatherings while a pattern of conduct tends to be recognized as the appropriate and official or intended one. Social occasions may also be irregular, like parties dances, sports |
| Unfocused interaction | | Relates to all those gestures and signals which can be communicated between individuals simply because of their co-presence within a specific context. |
| Focused interaction | Encounters Routines | Occurs where two or more individuals coordinate their activities through a continued intersection of facial expression and voice. (....like organizations..... hhe) |

Source: {Giddens 1984}

Figure 20 Patterns of interaction

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29 I want to refer to the point that some respondents have emphasized the importance of having the right people. I interpret this as having the people with the right motivation (or, personality). The reasons for their conduct can be developed, but their primary conduct drivers should be chosen carefully, according to the type of business. Although Giddens does not elaborate on this because he is rather interested into the production and reproduction of society, I will include motivation and personality in the model for Interaction Governance.
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35. Giddens again stresses that we have to be aware that encounters typically occur as routines. And the routinization of encounters is of major significance in binding the fleeting encounter to social reproduction. Therefore it is also important for governance practice. This can be illustrated by the four phenomena in social reproduction, which Giddens has identified during his analysis: how are encounters formed and reformed in the durée of daily existence; main mechanisms of duality of structure at the intersection of practical and discursive consciousness; the importance of talk - everyday conversation - for sustaining the encounters; the contextual organization should be examined since the mobilization of time-space is the grounding of all the above elements. Governance practice may adopt practical and discursive consciousness as the connection between individual and transformational frame. Talk sustains the encounters through the expression of knowledgeability, and individuals should ensure that they become aware of what is brought the situation. The manager should specifically focus on the focused interaction.

36. How are encounters formed and reformed in the durée of daily existence. Giddens follows Goffman in that all social interaction is situated interaction – situated in time and space. {Giddens 1984} (p86). The relevance for transformations (hence also for governance) is that the keys in transformations are the formulae whereby an
activity that is already meaningful in the primary framework, is given a meaning in a secondary framework.

37. The mechanisms of duality of structure are the pivotal point for governance. One of these is practical consciousness, which consists of knowing the rules and the tactics whereby daily social life is constituted and reconstituted across time and space. Some agents may be wrong at times on what these rules and tactics are, in which cases errors may emerge. There are also of course potential differences between the knowledge of rules and tactics in the milieux in which the agent moves and those which apply in contexts remote from his or her experience. These are practical issues a manager should be aware of when considering his governance actions.

38. The next question Giddens has asked himself is how the agent can be empowered in the production and reproduction of social life (or, operations in an organization). The level and nature of the 'penetration' actors may be enhanced in several ways: the means of access actors have to knowledge in virtue of their social location; the modes of articulation of knowledge; circumstances relating to the validity of the belief-claims taken as knowledge; factors to do with the means of dissemination of available knowledge. The appropriateness of these means differ from context. In large contexts actor's knowledge is limited to the context he lives in, and does not extent to the contexts which he does not directly experience. In contexts where actors live, they know a great deal more than they
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are aware as the result of sedimentation of experience in language. And he can be ignorant of the context he does not live in.

39. This may apply to lateral contexts or to vertical (social class) contexts. This does not only plead for differentiation of governance practice in large contexts as opposed to smaller contexts. It also shows the impact of electronic means in both large and smaller contexts. Beliefs can easily be checked, knowledge can more easily be collected, knowledge can more easily be stored, knowledge can more easily be disseminated. However, ignorance about the context where one is present, recurs much more in the digital world than in the traditional world. Therefore digital technology has potentially a dramatic impact on the reach and depth of governance.

Discussion

40. Act identification cannot be limited to the pure observable act itself. The separation of act and context can distort the interpretation. The scheme of interpretation that is applied to an act gives purpose and outcome. However, outcomes can both be desired and unintended. Each manager or leader has the opportunity to influence the interpretative scheme, or to initiate an act within a different context. This is a strong tool for the manager.

41. The implications of the notion of action for the reproduction of social life were the major interest of Giddens. However, in this thesis the interest is about the interference a manager can have in the
course of action for intended change in outcome. The conception of
a social system in which actions take place, and the relation of
actions and outcome provide several ways for a manager to influence
the course of action: to develop a structure that organizes the stream
of actions, to provide expectations of outcome; to give a
purpose/direction; communicate rational insights; build on
motivations (=personalities); develop learned procedures
(knowledgeability); grasp and communicate interpretative schemes
related to the PraxisI; be aware of "change" agent's circumstances;
communicate feedback from the relevant environment; ensure
shared direction, purpose or intention.

42. As regards agents Giddens has developed the following insights:
agents are embedded in a continuous stream of actions; agents deal
with these actions within a complex of different frames of purpose,
rational insights (reason), motivations and learned procedures; agents
constitute interpretative schemes but also are influenced by
interpretative schemes, the double hermeneutic of action;
interpretative schemes are sets of methods and procedures that
constitute a certain Praxis; the action gets meaning through the
circumstances within which it takes place; action can have different
outcomes, intended and unintended; the skill of an actor to have
reflexive monitoring of action against insights, purpose(s) and
learned procedures influences his action and the intention for
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outcome; in interaction these factors come in double from agent A and agent B.

43. Giddens relates the structuration process to transformation of collectivities or to social integration in interaction. This conception of transformation is critical for managers. In my view the combination of his insights and of the systems thinking on outcome become powerful. These are applicable in organizations if the manager considers the object of his agency as a social system, that may have outcomes in different qualities: power, wealth, knowledge, values and beauty. In business the dominant perspective is the economic perspective. In departments of the government it may be political power, knowledge or values.

44. Giddens has conceptualized the agent in two different aspects: one is the 'I' that is related to the context. And the other is the self, which is what account the agent gives of his action. The 'I' belongs to the structure. It has the properties that the present structure implies for the 'I'. 'I' is related to the activities in structuration. The 'Self' belongs to the psychological area of individual behaviour, and is the reflexive account of the agent in social action. Here we include the personality\(^{30}\) as well as the perception, beliefs and assumptions.

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\(^{30}\) Giddens has also discussed anxiety and trust. However, I did not consider this critical for governance practice, because he has dealt with it through analysis of 'critical situations', in which dramatic changes in one's environment causes adaptation. He suggests that personality may in these cases be less influential than the practical consciousness. The type of cases he has used are in my
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45. Now we may define governance of social systems more precisely. Governance is the activity that 1) brings together actors for a purpose; 2) ensures that different contexts are reckoned with or that defined purpose of desired outcomes aligned; 3) agent's beliefs and assumptions in that context are recognized and aligned; 4) contextual factors, rules and knowledge relevant for the situation are known by the actors; 5) interaction includes actors with the right knowledgeability, the right personality or motivation; 6) the structure is in accordance with the properties of a digital world.

46. In the digital world social integration has become mainstream activity. Staff has to deal with other disciplines or with actors who are part of a completely different context or with a completely different transformational frame. The manager should be aware of this, and act accordingly. In the digital world outsourcing of activities to Eastern Europe, South Africa or India is common ground. The challenges to forge new seamless processes over the (cultural) boundaries of organizations are huge, and demand much transformational power of both IT and Business Management. In the next section we will investigate how to mobilize this transformational power.

47. In summary the insights from Giddens provide substance to different domains of the interaction governance model. The

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view not representative for governance practice. Hence, I will assume that personalities and structures will have alternating weight in interaction.
interaction domain has been enriched by the notion of action, and its relation to outcome and structure. The notion to distinguish structure into a transformational part and context as proposed by Gharajedaghi is still useful. Transformational domain can be conceived as the less controllable, but pliant object of a manager. The context may be perceived as result in longer term and constraint of action in short term, not pliant by managers. The individual domain has now a notion of the 'I' and the Self of an agent. The personality conceives properties from the context. The individual properties are the foundation to build practical consciousness and discursive consciousness. As regards outcome Giddens has provided a frame to understand the qualities power, knowledge and values, and how they are created.

48. Where are we know? Giddens has taught how action is related to structure and institution. Systems thinking has taught how to cope with social dynamics, and provided insights for leadership and learning. The contingency theory has taught ways to cope with dependence in hierarchies and markets. And the transaction cost theory and their critiques have taught how to recognize different types of coordination, and its implications for the properties of that organization.
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Transformations

From Giddens to Gergen

49. Giddens has developed a theory on the constitution of society. Gergen {Gergen 1994} has analyzed how interactions influence the institution through interpretative schemes as defined by Giddens. It is one of the modalities that create structure. Gergen focuses on the domain of signification, less on morality and domination. He focuses on discursive and practical discourse, but also on the unconsciousness of actors. His perspective is expected to provides complementarities for the governance model.

50. First a short introduction positions the study, then the principles of constructionism in relation to governance are discussed. Also self-narration will be discussed since it is pivotal for the influence an individual can have on the environment. Finally the findings of Gergen on the communal origins of meaning will be analyzed, in which area the reseracher expects to find important clues how to apply interpretive schemes as drivers of structuration.

51. "All that is meaningful grows from relationships." This is the keystone of Kenneth Gergen's book. {Gergen 1994} He argues that Western culture has celebrated the individual mind as the locus of

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31 This section is completely drawn from Gergen, because it fits well with the view that organizations are social systems that continuously search for development. He has elaborated the practice of development.

32 In the terminology of Giddens the self-narrative is an account of the discursive consciousness, and implicitly the knowledgeability of the respondent on the positions he has had.
reason and, thus, of knowledge. According to Gergen, however, Descartes's famous dictum "I think therefore I am" should more properly be "I communicate, therefore I am". The process of doubt equates not with reason but with language, and meaningful language is less possession of a single mind than the product of interdependent relationships. Gergen argues that attempts to challenge the primacy of reason have focused on processes of discourse. Drawing from social and literary accounts of discourse Gergen considers these challenges to empiricism under the banner of "social construction". Gergen has outlined in his publication the major elements of social constructionist perspective. These will be dealt with and discussed in the context of governance.

52. Gergen argues that knowledge as individual possession reaches an impasse. Alternatively is suggested to view knowledge as lodged within the sphere of social relatedness. It is in this context that Gergen discusses the representation of the real world with words. How can this be an objective account? Think of ideology, literary—rhetorical or social critiques. The semantic link between word and world, signifier and signified, is broken in different and even conflicting ways. These three views have different views on truth. For the ideological critic, it is not the world as it is but typically self-interest that drives the author's account of the world. Truth claims originate in ideological commitments. On the other hand the literary critique removes "the object" as the touchstone of language,
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replacing it not with ideology but with text. The meaning and significance of truth claims are derived from a discursive history. The social critique, the third way, offers a contrasting account of language. It is neither underlying ideology nor textual history that shapes our conceptions of the true and the good. Rather, it is the social process.

53. Is there a way to mitigate these tensions? Gergen has looked for a positive way out. He considers the third way – the social process - as the most promising path for a transformative stage – deconstruction to reconstruction. This would result in a scientific practice: social construction. What are the components of social constructionist view of knowledge and what its promises for scientific practice? Gergen has formulated five assumptions for the constructionist view.

Social constructionism

54. *The terms by which we account for the world and ourselves are not dictated by the stipulated objects of such accounts.* In its most radical form, Gergen says, it proposes that there are no principled constraints over our characterization of state of affairs. In my view this can be explained as a characteristic of observation. Observation because it makes the observer the critical part of the expressed account. And communication because the account of an object can only be coloured with both the situation and history of the observer and of the one who gives the account. Hence, not the object of an account, but the observer and communicator determine how the
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state of affairs is interpreted: e.g. desired or undesired outcome. This assumption has implications for the practice of leaders: what is the value they attribute to events or objects?

55. *The terms and forms by which we achieve understanding of the world and ourselves are social artifacts, products of historically and culturally situated interchanges among people.* Constructionists assume that words take on their meaning only within the context of ongoing relationships. They are not the result of individual action or reaction, but of joint-action. Hence, *to achieve intelligibility is to participate in a reiterative pattern of relationship, or if sufficiently extended of a tradition. Or, a cultural tradition.* Understandings become culturally sedimented; they are constituents of the taken for granted order; they are based on the entire array of which such discourse is a part. Hence theories or predictions about unemployment, aggression or eating disorder is simply an exercise in language unless one is a participant within the forms of relationship in which those terms have been granted reference. (The researcher can find himself very well in the following statement of Gergen that "....., to convey abstract, decontextualized theories in journals, books, speeches, and the like is of limited practical consequence in terms of prediction or application." ){Gergen 1994}

56. *The degree to which a given account of world or self is sustained across time is not dependent on the objective validity of the account but on the changeability of social process.* The major implication for governance
is that to achieve intelligibility of individuals is more effectively achieved if embedded in a reiterative pattern of relationship, or if sufficiently extended of a tradition. Some consulting methods are based on this assumption. Gergen argues about communities of scientists that through continued negotiation, ritual practice, and the socialization of nephytes into these practices, communities can develop consensus over the "nature of things". This can of course be applied in any social system to accomplish transformation, and is practiced by Capgemini since more than 12 years in large transformational practices. The author of this thesis has participated in several of these transformation programs. They are very well structured around rituals and rules of behavior to create a new reality. The consulting firm has been very successful in many large programs all over the world with this approach and continues to integrate it into the present consulting practice by creating with customers the Collaborative Experience.

57. Language derives its significance in human affairs from the way in which it functions within patterns of relationship. Gergen notes that the constructionist is little likely to ask about the truth, validity or objectivity of a given account, or what predictions follow from a theory. Rather for a constructionist, samples of language are integers within patterns of relationship, they are outgrowth of specific modes of life, rituals of exchange, relations of control and domination. Gergen argues that the chief questions to be asked of
generalized truth claims are, how do they function, in which rituals are they essential, what activities are facilitated and what impeded, who is harmed and who gains by such claims? Below the origin of meaning will be discussed further, in order to analyze what its implication for governance is.

58. To appraise existing forms of discourse is to evaluate patterns of cultural life; such evaluations give voice to other cultural enclaves. Gergen argues that within a given community of intelligibility, where words and actions are related in reliable ways, it is possible to appraise what we call the “empirical validity” of an assertion. This is very useful, but it is essentially unreflexive. It is more important what the reality in these communities means for the lives of those in related or overlapping communities. A critical evaluation of various intelligibilities from exterior positions, exploring the impact on broader forms of cultural life may be more relevant for social life. What does the culture lose or gain if we constitute the world in the terms of the economist, the military strategist or the ecologist? Gergen does not want to celebrate the evaluation over communities in general, but to open the door to a fuller interweaving of the disparate communities of meaning. The implications for social systems and governance is that once managers should be aware of the different communities (equal to Praxis) they may find new ways to soften the boundaries between the communities, and alien communities may begin to adhere. Evaluative dialogue may be a
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significant step forward when collaboration should prevail over silos.

59. Then Gergen explores the importance of these assumptions for human sciences. The discussion is quite interesting, but is beyond the scope of this research. However, his conclusion at the end of this exploration gives some practical guidance to consultants and managers. In the realm of model practices their influence may be most powerful. When consultants create dialogue across the strata of an organization (as opposed to authoritative solutions), they implicitly create the reality of interdependence. The practitioner is not a mere servant of the existing institutions or logics developed within the tower, but a potential agent for far-reaching change.

From individual to relationship

60. Gergen has reasoned how the individual is positioned in his context, and how the accounts of individuals in fact are accounts of his relations with the environment. The understanding and visualization of this notion is practical for managers. It enhances their practice. Gergen {Gergen 1994} proposes a relational view of self-conception, one that views self-conception not as an individual’s personal and private cognitive structure but as discourse about the self. By discourse he means then the performance of languages available in the public sphere. He states that he perceives lives as narrative events. Stories are forms of accounting. However, narrative accounts are embedded within social action; they render
events socially visible and typically establish expectations for future events.

61. Gergen has then explored the nature of stories, as they are told and as they are lived in social life. First we will discuss how he has analyzed the structure of the stories. This is particularly interesting because the field research is based on narratives. Then we briefly look at how they are constructed. Gergen has discovered slowly during this exploration how narratives are not the fundamental possessions of the individual but possessions of relationships - products of social exchange. First we will review what Gergen discovered on the structure of narratives.

62. Gergen {Gergen 1994} sees the narrative constructions as historically and culturally contingent, and identifies five criteria that in particular appear to be central in constructing a narrative intelligible to significant segments of contemporary culture: establishing a valued point; selecting events relevant to the endpoint; the ordering of events; stability of identity; causal linkages; demarcation signs. These criteria will be briefly discussed.

63. 1) The endpoint may be an event to be explained, establishment of a goal, or outcome or significance. The selected endpoint is typically saturated with value: it is understood to be desirable or undesirable. It is also good to include a strong cultural component in the endpoint. 2) Selecting events relevant to the endpoint. Once the
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endpoint has been established, it more or less dictates the events in the story. An intelligible story is one in which events serve to make the goal more or less probable, accessible, important or vivid. Gergen finds that narrative demands have ontological consequences. One is not free to include all that takes place, but only what is relevant. 3) The ordering of events. Once the goal has been established and relevant events selected, the events are usually placed in an ordered arrangement. 4) Stability of identity. The well formed narrative is typically one in which the characters (or objects) in the story possess a continuous or coherent identity across time. 5) Causal linkages. Gergen argues that it is not to presume that a universal conception of causality is insinuated into all well-formed stories: what may be included within the acceptable range of causal forms is historically and culturally determined. 6) Demarcation signs. Beginning and end, and phrases in between are useful.

64. Gergen {Gergen 1994} has investigated whether it matters whether narratives are well formed in matters of daily live. "How individuals recount their histories - ..... - all shape what individuals can claim of their own lives. Personal stories are not merely a way of telling someone (or oneself) about one's life; they are the means by which identities may be fashioned." The ratings of stories in this investigation did show that participants were unable to discriminate between the genuine and fictional accounts, and an analysis of those accounts believed to be genuine as opposed to false proved interesting. When events relevant to the endpoint were dominant, and causal relations among elements were numerous, stories were
believed to be genuine. Gergen concludes by saying that the form of stories may not be so important in day to day live, but their structure may be essential.

65. Narratives may be broadly shared within the culture; they are frequently used, easily identified, and highly functional. In a sense they constitute a syllabary of possible selves. Narratives can have different structures: progressive, regressive, tragic, comedy-romance, happily-ever and heroic saga are distinguished. {Gergen 1994} One may perceive them as a tool box, in that narratives constructions are essentially linguistic tools with important social functions. Mastering various forms of narrative enhances one’s capacity for relatedness. For instance the regressive narratives serve as an important means for motivating people (including oneself) toward achieving positive ends.

66. Then Gergen gets to the conclusion of the narrative analysis. He suggests that self-narratives are immersed within processes of ongoing interchange. In a broad sense they serve to unite the past with the present and to signify future trajectories. It is their significance for the future that is of special interest, because it sets the stage for moral evaluation. Narratives are realized in action, and become subject to social appraisal. Others may find them coherent or contradictory. If actions are in conflict with the narrative, others may cast doubt on their validity, and social censure may be the result.
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67. This means that self-narrative is not simply a derivative of past encounters, reassembled within ongoing relationships; once used, it establishes the grounds for moral being within the community. It establishes reputation and it is the community of reputations that form the core of a moral tradition. In effect, the performance of self-narrative secures a relational future. Because narratives generate also expectations, there is inevitable question about whether actions measure up to expectations. In order to sustain identity, successful negotiation is required at every turn. More broadly, it may be said that maintaining identity - narrative validity within a community - is an interminable challenge. One’s moral being is never a completed project so long as the conversations of the culture continue.

68. The final relational feature is that the actions of others become an integral part of narrative intelligibility. They contribute vitally to the events linked in narrative sequence. In this sense, constructions of the self require a supporting cast. There are several indications from this insight. First of all if one’s actions are accounted for, others have to agree for its validity. Narratives validity depends strongly on the affirmation of others. This reliance on others places the actor in a position of precarious interdependence. As this interdependence of constructed narratives suggests, a fundamental aspect of social life is the network of reciprocating identities. Therefore one’s identity can only be maintained as long as others play their supporting role, and because one is required in turn to
play supporting roles in their constructions, the moment any participants decides to renege, he or she threatens the array of interdependent constructions.

Communal origins of meaning

69. Gergen argues that to begin solving the problem of human meaning with the assumption of individual subjectivity leaves no avenue to solution. {Gergen 1994} p262 He proposes an alternative route: start with the analysis at the level of the human relationship as it generates both language and understanding. This resolves the problem of understanding what already exists before the self is in existence. This argument is supported by the semiotics movement. They contend that it is not the individual who preexists the relationship and initiates the process of communication, but the conventions of relationship that enable understanding to be achieved.

70. However, Gergen has found yet another critic on the origins of meaning close to the semiotics movement, in which text is part of the system of signs. Sles (1986) observes that “nowhere in semiotics is the sense of uncertainty more obvious and profound than in relation to meaning.” Then Gergen discusses the rudiments of a relational account of meaning through discussing seven suppositions to extent this dialogue.

• An individual’s utterances in themselves possess no meaning. They only get meaning by the presence of another person.
• The potential for meaning is realized through supplementary action. Meaning is not born of action and reaction, meaning is born of joint action.
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- Supplements act both to create and to constrain meaning.
- Any supplement (or action-and-supplement) is a candidate for further supplementation.
- Meanings are subject to continuous reconstitution via the expanding domain of supplementation.
- As relationships are increasingly coordinated (ordered), so do ontologies and their instantiations develop.
- As consensus is established, so are the grounds for both understanding and misunderstanding.

71. With the discussion on these seven stipulations Gergen {Gergen 1994} has set out the rudiments of a relational account of meaning. The formulation envisions the generation of meaning as a tenuous and dynamic process, in which the understanding of another's language (or actions) is the achievement of successful coordination - in terms of local standards of judgement. Understanding is thus not a mental act originating within the mind but a social achievement taking place within the public domain. However, he argues that it is not only the achievement of personal deliberation but of coordinated action; and it is our achievement primarily by virtue of the cultural process in which we are embedded.

Discussion

72. Gergen has provided a way of looking at social environments which addresses a common challenge of many managers. Once all the procedures, roles and frameworks are in place, what can we do to generate the expected benefits? This is where a conception of social constructionism, the self, the importance of narratives and the constitution of meaning may support. These open the eyes for a practice that is focused on building relationships, and influencing
actions by influencing relationships through enhancing discourse and creating meanings with others.

73. Narratives are a tool to investigate the position of CIOs in their relation with business. Their account visualizes the practice in the setting of the IT function. Moreover it reckons with the position of the CIO as observer and communicator of governance. Since Gergen has proposed to question what the meaning of this account is for another community of stakeholders, this analysis should take this interdependence into account. What can business managers learn from the CIO narratives? And, how does the CIO view his relationship with the business?

The practitioners world

74. The literature review ends by studying the dynamics of relationships. Schön has investigated this by investigating cases of professionals who are new to a situation, and then have to create over and over again new realities. His work may provide insights into the dynamics of duality of structure. He studied the impact of reflection-in-action and its potential to shape the structure. Schön studies professionals in practice, and analyzes what the impact is on institution\(^3\) – what is developed, not visible but impacts the interaction between professional and client – as well as how the institution enables or constrains the action. Reflexivity is one of the

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\(^3\) The meaning of institution as studied by Schön is similar to the transformational frame as defined in the section of this chapter on systems thinking.
key characteristics of actors, and is a unique characteristic for social systems. \cite{Ackoff1972, Giddens1984, Giddens1976, Gergen1994} Reflexivity is related to the process of learning and the outcome of processes of learning: knowledgeability. Schön \cite{Schon1983} has analyzed the distinctive structure of reflection-in-action.

75. Interactions according to Schön \cite{Schon1983} take place through individuals or units that have assumptions and beliefs. Managers just as other professionals reflect in action. This is different for a manager, because his organization is both the stage for his activity and it is the object of his inquiry. Hence the phenomena in which he reflects are the phenomena of organizational life. His reflection in action draws on a stock of knowledge he has accumulated, adapting it to some present instance. In fact he functions as an agent of organizational learning, extending or restructuring the stock of knowledge for future inquiry. And organizations may be promoting or inhibitive to reflection in action. The organizational learning system influences severely the scope and direction of a manager's reflection-in-action.

76. Schön has analyzed business firms, because those were near to his situation during analysis. One of his observations is that managers do not reflect on their own reflection-in-action practice. Thus he argues, managers can not teach their environment how they reflect in action, and one of the most important functions is the education
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of his subordinates. Important is to understand how managers do reflect-in-action and how their reflection-in-action is limited.

77. In one organization he has studied the case of Product Development. Schön concluded from that case that credibility, confidence, competence and corporate commitment were interdependent variables. In the game of that case deception played an important role to keep these in balance and thus keep going in the product development process. Managers reflected-in-action or practiced learning when crises arose. However, they never did this in public, because that would disturb the balance. Reality and deception kept each other in balance.

78. Schön concludes that managers function as agents of organizational learning within an organizational learning system, a system of games and norms which both guide and limit the directions of organizational inquiry.

79. The case of Product Development reveals a learning system that creates a pattern of corporate crises and at the same time prohibits public reflection-in-action on their causes. As a consequence the organizational learning system becomes immune to reflection-in-action. In such a case reflection-in-action cannot be applied without transforming the theories of action which they bring to their lives within the organization.
Limits of Learning

80. Now Schön looks for a solution through starting a dialogue between management science and reflection-in-action and management artistry and intuition. The relevance for this investigation is to understand the scope and limits of learning in organizations, and find a way to deal with it. Schön concluded that reflection-in-action
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is influenced by the frame of the learning process. This frame imposes the limits and potential of a learning process. The frame consists of the following constant factors:

- The media, languages, and repertoires that practitioners use to describe reality and conduct experiments;
- the appreciative systems they bring to the problem setting, to the evaluation of the inquiry, and to reflective conversation;
- the overarching theories by which they make sense of phenomena;
- the role frames within which they set their tasks and through which they bound their institutional settings. The differences in role frame help to determine what knowledge is seen as useful in practice and what kinds of reflection are undertaken in action.

81. When a manager gives the frame and its institutional context a central place in the learning process, then he pays attention the phenomena for which there is no off the shelf theory. In that case he will construct theory of his own. And Schön continues arguing that if the manager treats this theory of the context as an object of his own, then he will perceive that others in the situation meet his frames and theories with frames and theories of their own. He will see them as practitioners with their own frame of context. And his interaction with them will take the form of a reflective conversation. The frame he proposes fits into the transformational domain of interaction.

82. In these ways differences in the frame - as defined in two paragraphs before - brought to inquiry affect the scope and direction of reflection-in-action. But the constants of the frame – media, etc.... –
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are also subject to change. They tend to change over periods of time. They also may change through the practitioner's reflection on the events of practice.

83. The researcher thinks that from the analysis of Schön two principles for management can be derived: consider the frames of people as an object in itself and you will find ways that have impact on the development of the network without being present all the time; consider the trends that influence those frames over a longer period of time, since this will learn to anticipate developments and be in time when the direction has to get replaced. Principle 1: treat frames as object of management. Principle 2: link trends to the frames brought to the situation. If these are accepted principles for the manager Giddens Duality of Structure provides a framework to visualize the frame in aspects of Signification, Domination and Legitimacy. These principles are based on the idea of Schön that ... “thinking interferes with doing”. Secondly he has shown that knowing-in-practice limits both individuals and organizations and suggests directions in which such limits might be extended. This explains the limitations of learning and self-limiting reflection in an organization.

84. However, a practitioner can resolve this limitation, according to Schön, by attending to his role frame, his interpersonal theory-in-use, or the organizational learning system in which he functions. Whatever his starting point it is unlikely to get very far unless he wants to extend and deepen his reflection-in-action, and unless
others help him see what he has worked to avoid seeing. This conclusion of Schöns supports the importance of the learning laboratory that Senge and Sterman have further elaborated to tackle more structural issues in organizations. {Senge 1992}.

**Generic interaction models**

85. Then Schöns assumes an interaction as part of a set of interactions that are assumed to result into the destiny expressed through a mission statement. He asks himself how to prevent uncorrectable errors. There are several ways the participants may get into uncorrectable errors. Although Schöns has focused his conclusion on the professional practitioner, who has a direct professional—client relationship, the researcher assumes that this is also applicable to interaction in general. Each interaction is justified by the demand of one party, and the assumption that the other party can deliver.

86. Schöns has assumed model I as a reference to explain his conclusions: professional and client strive for control, or try to evade from the expert advice, the professional is pushed towards going beyond his expertise. The client may try to weaken or gain control through a second opinion. Since it is not done to admit uncertainty, professional reflection-in-action is not possible in model I. Thus Model I reinforces the uncorrectable errors.
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<table>
<thead>
<tr>
<th>Expert - Model I</th>
<th>Reflective Practitioner Model II</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am presumed to know and must claim to do so regardless of my own uncertainties</td>
<td>I am presumed to know but am not the only one in this situation to have relevant and important knowledge. My uncertainties may be a source of learning for me and for them.</td>
</tr>
<tr>
<td>Keep my distance from the client, and hold on to the expert’s role. Give the client a sense of my expertise, but convey a feeling of warmth and sympathy as a “sweetener”.</td>
<td>Seek out connections to the clients thoughts and feelings. Allow his respect for my knowledge to emerge from his discovery of it in the situation.</td>
</tr>
<tr>
<td>Look for defense and status in the client’s response to my professional persona</td>
<td>Look for the sense of freedom and of real connection to the client, as a consequence of no longer needing to maintain a professional facade.</td>
</tr>
</tbody>
</table>

Source: {Schön 1983}

Figure 22 Two patterns for a client – professional model

87. These differences in satisfaction and sources of demands in a client’s traditional and reflective contract can be summarized as in Figure 23. The model I in which professional and client strive for control, or try to evade from the expert advice, the professional is pushed towards going beyond his expertise. The client may try to weaken or gain control through a second opinion. Since it is not done to admit uncertainty, reflection-in-action is not possible in model I. Model I reinforces the uncorrectable errors
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<table>
<thead>
<tr>
<th>Traditional contract</th>
<th>Reflective contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>I put myself into the professional’s hands and in doing this, I gain a sense of security based on faith</td>
<td>I join with the professional in making sense of my case, and in doing this I gain a sense of increased involvement and action</td>
</tr>
<tr>
<td>I have the comfort of being in good hands. I need only comply with his advice and all will be well</td>
<td>I can exercise some control over the situation. I am not wholly dependent on him; he is also dependent on information and action that only I can undertake</td>
</tr>
<tr>
<td>I am pleased to be served by the best person available</td>
<td>I am pleased to be able to test my judgments about his competence. I enjoy the excitement of discovery about his knowledge, about the phenomena of his practice, and about myself</td>
</tr>
</tbody>
</table>

Source {Schön 1983}

Figure 23 Two patterns of control in the professional client – relationship

88. Furthermore Schön has analyzed when incorrectable errors arise. This is in particular interesting for managers, because knowing enables anticipation in action. Situations in which uncorrectable errors arise are:

- when the understanding of the situation or the situation itself is uncertain, vague, or ambiguous
- when the situation is uncertain it is not sure what expectations one ought to have;
- when the description is vague or ambiguous, it is not directly testable
- when one’s system of understanding is inconsistent the very same outcome may seem an error or not an error

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- when the espoused theory is inconsistent with the theory-in-use then an outcome may be a match with the first and a mismatch with the second.

89. In order to correct or prevent errors such as these, these conditions have to be removed. This can be done by: creating a model and test; make descriptions clear and testable. Uncertainty may trigger a defensive reaction in which client or professional denies his uncertainty. Vagueness may be applied to keep control: the patient about his symptoms, the lawyer about his understanding of the situation. Thus conditions of uncorrectable error stimulate reactions according to Model I in which responses tend to reinforce the uncorrectable errors.

90. Now Schön reasons to escape from this situation. Unilateral change is not possible to escape from the model I win/loose. Whoever begins he may need to bring a theory in use that prevents to trigger for defensive behavior. Because defensiveness makes it hard to surface dilemma’s and inquiries inherent in the initial shift towards the reflective contract. The professional may change the lock by conveying that he has an evolving understanding of the situation, but that he is concerned about frightening the client.

91. Two effects may this have: make it easier for the client to admit his uncertainty; demonstrate a way to share the uncertainty. The client may change by asking whether the professional meant maybe this view, or ask the professional his personal feelings about the case.
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However, these tricks are no guarantee for a change. It will very likely take time to proceed gradually. On the other hand sometimes favorable conditions are present: client or professional may be ready to enter such a contract. In that case it may be easy to set things in motion.

Discussion

92. When I reflect on Schön’s arguments, I think that this practice in doing applies to situations of interaction between two individuals or units. Schön clarifies the structure of the frame these participants work with? The two models also clarify the related attitude towards two alternative frames? When a relationship exists already for a long time, these factors may have been evolved tacitly. A manager can prevent uncorrectable errors by paying attention to each situation. In the field research attention will be paid to these aspects as well.

93. Reflection-in-action provides insights in learning practice of an organization. Also about the frame of learning. The frame he proposes may serve as a reference to understand the differences between two actors in interaction. Evaluative questioning or the suggestions of Schön in paragraph 91 and 92 may support the learning agent to develop more effective relationships.
CHAPTER 3.5 SUMMARY OF LITERATURE REVIEW

1. Practitioners sometimes argue about the benefit of academic research. It is too abstract and not readily applicable. They look for Best Practices, that can easily be applied. This thesis did not search for Best Practices. This research focuses on getting a better understanding of daily operations. It is assumed that the better an operation is understood, the better it can be influenced. Therefore the results of this research are not readily applicable. Rather it provides a frame for a better understanding of the concepts and their interrelation, which is an aid to fully exploiting the insights gained.

2. It is also assumed that in a digital world managers have a more limited knowledgeability about operations than before the introduction of the personal computer and internet, due to an enlarged and more diversified virtual space in which people interact. Within organizations this is enabled by the intranet as a knowledge sharing and collaborative tool, outside organizations this is enabled by the ease with which interest groups or businesses arise and with which they can be joined. On the other hand virtual space renders the opportunity to managers to have a very wide reach and a more intense influence - geographically - on dispersed employees. How can a manager exploit these new characteristics of the digital world?

3. This research is more focused on creating understanding. In chapter three it was argued that the economic perspective was not sufficient,
that the social perspective was badly needed in order to distinguish
good performance from bad. This became more vigorously apparent
due to the tendency of markets and hierarchies to transform into
network organizations. Since this change had also caused a change of
organizational structures, the knowledgeable of the actors who
come from the traditional world becomes obsolete, and they have to
adapt continuously. Market dynamics have made the capability of
rebuilding knowledgeable even critical to organizations. Volberda
has elaborated this more explicitly. He argues that one of the two
key aspects of flexibility is a management capability to transform or
change easily. The other one is the capability for organizational re-
design

4. The insight of these strands support the idea that socio-cultural
aspects should be reckoned with in governance practice and that the
economic and contingency approaches in fact were incomplete for
understanding or building governance practice. The systems
approach has resolved this by developing systemic approaches to
understand the structural and behavioral aspects of social systems.
Based on this insight the following perspective has been adopted for
this thesis: "...... governance of operations is similar to governance
of a social system. Governance transforms the system from a
present state to a new state......". Once this view is accepted it
becomes clear why Giddens provides such an important part of the
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literature review. He has provided a framework for visualizing the production and reproduction of a social systems.

5. Now the loop has been closed. Giddens' theory provides answers related to the social aspects of operations that were recognized but unanswered by Coase and Simon. His theory provides an understanding of the reproduction of a social system. The duality of structure is the principal insight of a social system, and this has visualized the dynamics in social systems. It is also fair to say that organizations, hierarchies, network organizations and markets are social systems. Hence the duality of structure should be included in the governance model. Duality of structure is the concept that gives insight into how social systems progress from one state to another.

6. What the new stage of a social system is, is a matter of perception. For an organization it is described by its performance measures. Usually organizations have the economic aspect as a dominant variable. However, the economic performance should not be seen in isolation. During the literature review authors have argued that economic performance is inter-dependent with social performance. Therefore the model - described in chapter 4 - includes the transformational frame to deal with the interdependence between governance, social development and economic outcome.

7. The model expresses that governance is the activity of influencing the behavior of a social system at the level of encounters and moving
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it in a pre-defined direction. The result is a change in the transformational frame that is carried forward to the next phase – as a continuum. Systems literature has also provided dimensions which enable the stakeholders to evaluate the effectiveness of the social system.

8. During the literature study several concepts were developed that support the understanding of the behavior of social systems, and enable the connection of the inner individual with the wider context in a specific situation. In this thesis, I argue that the better that connection is understood, the better results a manager produces. These concepts have been developed around the agent, social system, account of action, social domains, tools, constraints and development. These concepts can be considered as the elements to understand and manage a social system, or organization.

9. During the literature review insights have been identified around these concepts. The insights are based on their relatedness with the topic of interaction and the connection between individual, interaction and context. Initially 95 insights have been identified. These have been used as a reference for the narratives. The total number of insights is referred to as the governance potential. They provide the means that literature has created to enhance governance practice. For each insight the frequency of its occurrence in a narrative has been captured, and the frequency has been used to identify their relevance for governance practice of respondents.
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10. The analysis of insights has also been applied to the construction and description of the governance model. They have been related to the domains of the model in chapter 4, and are discussed at more length in Appendix C. The literature review, the insights and the insight discussion provide the basis for the model as described in Chapter 4.
<table>
<thead>
<tr>
<th>Social Perspective</th>
<th>Agent</th>
<th>Social system</th>
<th>Account of action</th>
<th>Social Domains</th>
<th>Tools</th>
<th>Constraints</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td></td>
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<tr>
<td>'I'</td>
<td>Personality</td>
<td>Choice</td>
<td>Motive</td>
<td>Agent</td>
<td>Language integers</td>
<td>Contract</td>
<td>Interaction</td>
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<td></td>
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<td></td>
<td></td>
<td>Embodied frame</td>
<td>Communication</td>
<td>Values</td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>Practical</td>
<td>Decision</td>
<td>Reason</td>
<td>Controllable</td>
<td>Coordination</td>
<td>Role</td>
<td>Convention</td>
</tr>
<tr>
<td>Encounter</td>
<td>Consciousness</td>
<td>frame</td>
<td>mechanism</td>
<td></td>
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</tr>
<tr>
<td>Group</td>
<td>Discursive</td>
<td>Decision-making</td>
<td>Self-narrative</td>
<td>Transformational</td>
<td>Values</td>
<td>Budget</td>
<td>Meaning</td>
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<td></td>
<td>Consciousness</td>
<td>Process</td>
<td>frame</td>
<td>Sanctions</td>
<td>Goal</td>
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<tr>
<td>Network</td>
<td>Discursive</td>
<td>Social Process</td>
<td>Annual report</td>
<td>Context</td>
<td>Values</td>
<td>Purpose</td>
<td>Culture</td>
</tr>
<tr>
<td></td>
<td>Consciousness</td>
<td></td>
<td>Sanctions</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Source: Literature analysis, 2007

Embodied frame is the stock of knowledge experience and history
Self-narrative is related to the group because it reflects the person in group action
CHAPTER 4 GOVERNANCE MODEL - SYNTHESIS

Introduction

1. Managers need a comprehensive model that is easy to understand, easy to recall in practice and that facilitates communication with their peers. The environment is too dynamic to control all the work in interactions. The model should provide guidance and direction to reduce the alignment effort of interactions in network organizations and empower its actors. The model should serve as the visualization of a world in action, from a governance perspective. This implies that it should reflect the action itself, the outcome, the context and interventions. Moreover it implies that it should provide a handle for steering and influencing outcome. What should this model look like?

2. At the start of the research some premises were made. The first premise is that governance should focus on the relationship of actors and the effectiveness of their interaction. Another premise is that the object of governance is a social system embedded in a larger cultural context. Managers can influence the course of action by consistently conditioning interaction. A third premise is that properties of interaction can be divided into three sub-domains: the individual, the group and the properties of the structure of

34 Manager is interchangeable with leaders throughout the dissertation. Leadership and management cannot be considered separately. Managers need a leadership competence, and leaders need some management competency.
interaction. Conditioning of interaction is done at controllable frame by distributing decision-rights for instance or impose KPIs for processes or individual performance.

Figure 25 Interaction Governance Model

3. The controllable structure is the easiest part of management. It can be shaped because the manager has the authority. However, operational effectiveness needs more to it. Influencing the operational level needs effectiveness at an invisible level of the interaction: the transformational frame. It is the transformational
level that determines the level of effectiveness. This effectiveness depends to a large extent on the practical consciousness and beliefs of the actors. Practical consciousness refers to the awareness of one's circumstances related to one's activity. {Giddens 1984} In this thesis practical consciousness and knowledgeability are often used as synonyms. Both practical consciousness and assumptions are critical areas for managers, because these are the areas where choice can be influenced. And, both areas can be influenced.

4. Furthermore the model includes feedback loops. Feedback may arise from the environment or from within the social system. Feedbacks are important because they shape the assumptions and beliefs of individuals and managers. Therefore feedback is also included in the model. In this chapter is described how the six domains are related to each other. Then the six domains will be described. For the readers who still want more in-depth discussion, Appendix C will meet their wishes.

Interaction Governance Model

5. The metamodel defines what has to be included in the description of each domain. For each domain the author defined what it is, made certain assumptions and identified the relations with other domains. He has based this model description on the literature review and an analysis of literature insights per domain. The more extensive analysis has been described in Appendix C. The section below summarizes the model.
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- Interaction Governance. The center piece of the model is interaction. By shaping the interaction, the manager shapes the internal logic to drive an operation.
- Interaction. Is a coordinated operation that takes place in organizations during an encounter. It is the object for managers, because here managers can influence (premise). A social system is defined as a set of coherent relationships. The boundaries of the system do not necessarily coincide with the boundaries of a hierarchy. For example, in an outsourcing relationship the social system comprises two hierarchies, which have coalesced the interactions. Interaction comprises three domains: individual, structure and group. Change in one of these domains requires adaptation in the other two. Interaction is conditioned by management interventions and constrained by its structure (controllable frame). Interaction also influences the transformational frame and is simultaneously constrained by it. Interaction produces outcome, structure does not produce outcome.
- Structure can be divided into three areas of influence: controllable, transformational and contextual. The controllable structure consists of properties that can be changed directly by the manager, if he has the authority to do so. It may consist of roles, KPI's, task assignments, process structures, relationships or skills. The controllable frame is explicitly known by participants. It is the most visible part of management.
- The transformational frame consists of properties that can only be influenced and changed by delay. Interactions produce or change the properties of the transformational frame. Since interactions never stop, the production of the transformational frame is a continuous process. On the other hand the controllable frame is a discreet process, e.g. KPIs are agreed once a year. The transformational frame has a direct impact on interaction. It consists for example of the language and repertoires that practitioners use to describe reality and conduct experiments; or, the different role frames that are accepted. Differences in role frame help to determine what knowledge is seen as useful in practice and what kinds of reflection are undertaken in action. {Schön 1983} The transformational frame both constrains and empowers interaction, and furthermore it is influenced by the
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history of interactions. History and experience are important aspects of the interactions, since its length determines the strength of the relationship and its transformational frame. It is also influenced by the context, although this is often a delayed and indirect influence.\(^{35}\)

- **Outcome.** Is the real world effect of an interaction or the emergent property of a set of interactions. Emergent property is distinct from the properties that each part of the social system has, and cannot be reproduced by the parts separately. Outcome can be quantitative as well as qualitative, and can never be expressed in absolute terms only. Interaction produces outcome, and changes the transformational frame. Outcome also influences the social system indirectly. The actors of the social system will interpret the outcome with some delay, and shape beliefs about what has happened. These assumptions or beliefs will subsequently constrain or empower the manager or actors in subsequent interactions.\(^{36}\)

- **Intervention** is the direct or indirect agency of managers that influences the course of action and the performance of operations. Agency can be interpreted very broadly: just being present as the boss; not being there; structuring before operations; imposing rules of conduct on interaction; preparing stakeholders before. Three types of intervention have been derived from the three aspect areas of interaction. The individual can be influenced through leadership and learning. Both the controllable and transformational structure can be influenced by changing dependency between organizational units. Group behavior is influenced by learning, managing dependence and leadership. Authority is another way to influence group or individual behavior. The fashion in governance practice influences what interventions are preferred. Sometimes they are influenced by events in the world or the dominant cultural context.

\(^{35}\) An example is how the ENRON and Worldcom affairs in the United States have accelerated and aggravated the rules with which companies have to comply, with the objective to protect stakeholders. The Sarbanes-Oxley Act would not have been implemented so rigidly and so quickly if these events had not occurred.

\(^{36}\) The remuneration of top managers is an example of how an isolated interaction - the negotiation of a bonus - may lead to a payment that is conceived as unreasonably high by the public. Pressure from public opinion has made several managers renounce the remuneration or donate it to a foundation for a social goal.
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Interventions co-produce the transformational frame, and as such condition the three sub-domains of interaction.

![Diagram of Governance in CIO Practice]

Source: based on literature review, 2007

Figure 26 Interaction Governance Model elaborated

- Context. Is the situatedness of interaction determined by the geography, history and larger cultural environment of interaction. Contexts are continuously developed by the outcomes of a continuous flow of interactions. A longer, continuous and consistent pattern of action produces a reputation in the context and becomes part of the context for interaction (premise of duality of structure). The context consists of generally accepted opinions, new insights or events which shape (management) assumptions and beliefs. Context constrains the transformational frame on one hand. On the other hand context may also influence the transformational frame. The economic climate may for example influence how Unions and Companies negotiate with each other. Or, 9/11 influences how easily ethnic groups coexists.
6. This model has been used to reflect on the narratives of the CIOs. Each narrative has been searched for any cases. Each case has been described in a structured way. This description has been analyzed through the lenses of this model. The insights have been the filter through which the cases have been analyzed. In the next chapter the insights that have been recognized in the narratives of CIOs have been discussed as present practice. Then the difference between present practice and potential practice is analyzed. Thus recommendations have been found for the practice of CIOs.
CHAPTER 5 ANALYSIS OF GOVERNANCE IN CIO PRACTICE

Introduction

1. The model describes the potential of governance practice. The potential is more extensively expressed by 95 insights. In this chapter the field data will be analyzed. The narratives of respondents have been analyzed first with a structure provided by Gergen. Then the model has been applied as a frame for observation. The interviews are self-narratives, because the respondent has been asked to tell about his own experience. Gergen considers self-narratives as forms of social accounting or public discourse. He argues that "...... in this sense, narratives are conversational resources, constructions open to continuous alteration as interaction progresses. Persons do not consult an internal script, cognitive structure, or appreciative mass for information or guidance; they do not interpret or "read the world" through narrative lenses; they do not author their own lives. Rather, the self-narrative is a linguistic implement embedded within conventional sequences of action and employed in relationships in such a way as to sustain, enhance, or impede various forms of action. (p188) {Gergen 1994}"

2. Narratives replace the emphasis on the self-determining ego with social interchange, according to Gergen. This view is adopted in this thesis. The narratives are perceived as an account of the self in a socio-cultural context. Narratives do not tell an isolated story, but
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tell a story of what has been effective or ineffective. The stories told
by the respondents are all placed in a specific context by the
following introduction at the start of the interview: "...... Digital
organizations increasingly resemble network organizations. Examples are the
Business and ICT alignment and Application Development area. Both could be
seen as a network of professionals and managers who continuously interact with
the business on one side, embedded in social processes of decision-making related
to design, development and testing and with IT operations at the other side
Another example is the interaction of organizational units of multinationals at a
global scale, which interact in a way that they can be perceived as almost real time
networks. Boundaries of organizational units are more permeable; networks
become more agile, and operate at higher dynamics. All interactions that
contribute to specific goals require management attention. However, interactions
take place out of sight or there are too many interactions to control. What other
options are available besides direct control? A third example is the IT organization,
which may be seen as a network organization of professionals, projects and
business entities. Each has a network of relationships that interact with each other.
In this research I presume that such an organization can benefit when it takes a
paradigm to manage interactions instead of individuals. Or managing social
relationships instead of individuals. This can be done in a number of ways." ......
Then the respondents were asked to tell about their management
practice. All have had substantial experience in management
functions for at least 10 years. This was required in order to include
the pre-internet era, since managers who have experienced both
periods in management practice are assumed to be more aware of the
difference in the characteristics of the respective eras.
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Data Analysis approach

3. The narratives have been analyzed in order to understand what the narrator personally appreciates from the situation of which he gives the account. The interview takes on average between 75 and 100 minutes. In some cases additional information from the respondent has been added after the interview report was completed. However, for practical reasons and the difficulty of scheduling meetings not all interviews have been reviewed. The interviews with the European CIOs have been conducted by telephone.

4. Although cross language interviews were originally perceived as a risk by the author, this has not affected the quality much. The respondents were all experienced managers who could express themselves concisely. The use of another language has made their account also quite straightforward. Besides this, the interpretations have been minimized by the way of reporting. The interviews have been recorded in writing almost literally and have been elaborated immediately afterwards, which has guaranteed a minimum loss of meaning.

5. First the interviews were analyzed, and cases were derived. Gergen has investigated several theorists who have tried to identify the characteristics of well formed narratives. {Gergen 1994} This analysis and his social constructionist view yielded the following criteria for assessing the quality of a good narrative: each narrative needs a valued endpoint that gives meaning to the events; events are
selected and should be put in a certain sequence; the stability of the roles and identity should be analyzed; causality and, finally a demarcation comment should be included. Furthermore the context of the cases has been preserved, because they are still available in the complete interview report.

6. Each of the five case criteria have been applied to identified case topics. A topic has been discovered by asking what challenge is expressed by the CIO. Then the causality has been derived from the CIO’s narration on what he has perceived as a successful response to that challenge. The outcome of this response and the insights - Appendix A - that are directly supported by a particular case are based on the interpretation of the researcher. The challenges, together with the causality of each case, has resulted in the identification of governance objects. The objects have been identified by inductive reasoning. The identified object has subsequently been given a definition. Also the governance practice as regards that object has been identified based on inductive reasoning.
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Criteria for Case descriptions
The cases narrated during the interviews have been isolated, and structured according to the criteria as provided by Gergen:

a. Establishing a valued endpoint. An acceptable story must first establish a goal, an event to be explained, a state to be reached or avoided, an outcome of significance, or more informally a "point".

b. Selecting events relevant to the endpoint. The endpoint more or less dictates the kinds of events that can figure in the account.

c. The ordering of events. Once the goal has been established and relevant events selected, the events are usually placed in an ordered arrangement.

d. Stability of identity. The well-formed narrative is typically one in which the characters (or objects) in the story possess a continuous or coherent identity across time.

e. Causal linkages. It should provide an explanation for the outcome.

f. Demarcation signs. Properly formed stories employ signals to indicate the beginning and the end.

7. The cases describe present governance practice because they reflect what managers do in response to a challenge. During the analysis the cases are linked with the insights which were derived from academic literature. The insights are in this thesis conceived as the potential of governance practice. To link the insights – 95 in total - N6 software has been used. This facilitates the establishment of connections between text units and the analysis of patterns per governance object. The software also enables easy manipulation and facilitates the account of the details of the analysis. The analysis may result in
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during the identification of different or similar governance styles of one object.

<table>
<thead>
<tr>
<th>Review Interview</th>
<th>Prepare</th>
<th>Analyze Code</th>
<th>Analyze</th>
<th>Summarize</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 Insights from literature review</td>
<td>Structured Report of 39 Cases Derived from Narratives</td>
<td>39 Cases linked to insights</td>
<td>Objects of Governance Practice, Challenges, Causalities, Governance Patterns based On Insights</td>
<td>Governance styles, Potential (not) used</td>
</tr>
<tr>
<td>11 Narratives From CIO's</td>
<td>Interpret Case Context From Narrative</td>
<td>Case context linked to insights</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 27 Overview Case identification and analysis process

8. During analysis not much relevance has been given to the distinction between b and c. The aspects a and e are critical for this analysis and have been made explicit in each case. The other aspects are included when narrated by the respondent. Each statement of the respondent has been analyzed and the researcher has interpreted whether it
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supports one or more of the specific 95 insights. If that statement supports a certain insight, then there is support for the practical value of the insight. When an insight is not supported, either the insight is not applied, or not relevant at all.

9. By using this approach it is expected that more understanding will be developed to answer the following questions:
   g. Which insights from literature are perceived most relevant for governance?
   h. Which insights have not been supported by narratives?
   i. Are these insights a potential for the manager?
   j. Can governance be visualized?
   k. What styles can be identified in governance practice?

CIO Governance Practice Analysis

10. What are ways to influence interactions? What is the desired result of interaction? These are the questions a CIO has to resolve. In order to get a handle on this, 11 interviews have been analyzed, and at first 43 cases have been isolated for further analysis. Of these cases 4 were abandoned because they did not give an adequate account of the identified object. When the case had been isolated, three characteristics were identified by the researcher. What challenge does the manager perceive, what is the object of his governance action and how did he respond to the challenge. (see Appendix B Case Analysis) Sometimes a little interpretation from the researcher was required. The challenge indicates the desired change of the identified object, and is determined by its context. An object may be recognized in many different situations. Once the object is known
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and the challenge is known, the governance mechanism can be analyzed through analysis of the related isolated cases. This mechanism brings about the change and results in the end-state or outcome of the object. The mechanism is a composite of the different concepts summarized in chapter 4.

Case analysis approach

11. Each object has been defined according to the rules applied in the information analysis practice: ...... an object is a <thing, concept or idea> that can be transformed into a <state of affairs or condition>. The table provides the details of the governance objects.
Figure 28 Example of relation of object, cases and insights
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Note: "X" means that the insight is supported by text units of the narrative. For example: high frequency means that the insights 11, 13 and 73 are qualified "substantial insights". For a summary of all identified insights see Appendix A.

12. The governance objects will be explored below. First of all the different aspects reported by the CIO's will be discussed. Then we will analyze which insights are most clearly supported by the cases. This is done by assessing the frequency at which each insight has been related to the cases that refer to one governance object. For example: the object 'staff self-management' has been identified in four cases; during analysis of these cases it appeared that they supported some insights explicitly, others more implicitly; the frequency of these occurrences determines the degree of importance of this insight for a specific governance object. Substantial, supported and not supported insights are distinguished. The substantially supported insights will be listed in a separate text box. The set of insights in the text box constitute the governance pattern that has been identified.

Governance objects

13. An object is the variable element in an organizational structure. It is an idea, concept or aspect of which the quality can be changed. Governance changes the value of its characteristics. It is assumed that a manager can influence these values. As discussed in chapter 3 the values of performance may be a change in: economic outcome,
values, knowledge, beauty or power. Each case deals with one specific object. The case by definition represents a challenge. The goal of the manager is to achieve a change in the situation to meet that challenge.

<table>
<thead>
<tr>
<th></th>
<th>Employee self-management</th>
<th>4</th>
<th>Knowledgeability of employees to cope with less transparency in job and goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Staff Effectiveness</td>
<td>2</td>
<td>Is the performance of staff in accordance with the business strategy</td>
</tr>
<tr>
<td>3</td>
<td>Authority</td>
<td>6</td>
<td>Is the decision-right that may be exercised and accepted when decisions have to be taken</td>
</tr>
<tr>
<td>4</td>
<td>Process</td>
<td>4</td>
<td>The combination of activities and interactions of actors to achieve a pre-defined output</td>
</tr>
<tr>
<td>5</td>
<td>Coordination</td>
<td>7</td>
<td>The activity to align the relationship in which one actor cannot achieve his goal without the service of another actor</td>
</tr>
<tr>
<td>6</td>
<td>Choice</td>
<td>3</td>
<td>Choice is the product of interaction between the emotional, political and cultural dimension embodied in an individual.</td>
</tr>
<tr>
<td>7</td>
<td>Decision</td>
<td>3</td>
<td>The product of the process that analyzes premises and draws conclusions as regards a business issue by two or more stakeholders</td>
</tr>
<tr>
<td>8</td>
<td>Inter-dependence</td>
<td>4</td>
<td>Is the situation in which the existence of two or more events, assumptions, domains or actors has complementarities, a constraining or synergetic influence on each other.</td>
</tr>
<tr>
<td>9</td>
<td>Large Program</td>
<td>3</td>
<td>Is a multi-stakeholder activity that requires focused coordination for a longer period of time that cannot be met by current operations or one project.</td>
</tr>
<tr>
<td>10</td>
<td>Knowledgeability</td>
<td>3</td>
<td>Is the competence of an individual required to perform his tasks taking the social, content-related and economic perspectives into account</td>
</tr>
</tbody>
</table>

*Source: Objects identified during CIO Survey Analysis, 2006; definitions developed during thesis development.*
Analysis Approach

14. Each governance object has been analyzed. First the narrative of the object – the case description - has been analyzed. Then each case has been connected to insights. This analysis needed some interpretation. Since each case is embedded in an interview, and during the interview a specific setting has been narrated, some interpretation was possible. The interpretation has been limited as much as possible by sticking to the text from the respondent. That text is included in Appendix C and has only been edited for the purpose of this thesis. The purpose of the case descriptions is to communicate the experience and perspective of the respondent as truthfully as possible.

15. Then each case has been connected to insights which are provided by the literature study during this research. If an object is connected to a specific insight this has been captured in a large table. Each row represents a case, and each column represents one of the 95 insights. The matrix contains 39 rows and 95 columns. Then the cases have been clustered per object. The frequency of cases per object have been put in one table. The comparison of all cases per object provides an overview of the frequency per insight per object. When the frequency of insights appears in more than 50% of the cases per object, then it is qualified as substantial insight. Example: one object contains 6 cases. In 4 cases the insight is recognized. This insight is qualified as a substantial insight. These insights have been reported in
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Appendix C. The implicit experience has now been made explicit, and can be transferred.

Governance Object Analysis

Employee self-management

16. Due to the adoption of Internet the challenge was described by one of the CIOs as follows: .... with mailing, collaboration and knowledge management tools every employee has to be self managed. He has much more freedom to act, but this requires also self-control...... What would be a sensible approach to enhance self-management? What does the interaction model say. In the interaction model, interaction has three domains that jointly produce an outcome - individual, structure, and group. These domains should not be dealt with in isolation, but as properties of the same interaction. If one changes, the others should be reconsidered for fit. CIOs have confirmed this insight. One CIO has explicitly narrated on the same topic by reporting that a change of staff competencies is required. The interaction model suggests three ways to do this: 1) manage the space of ‘self’ and ‘encounters’; 2) develop the individual ‘I’, which is the embodied set of knowledge, assumptions, beliefs, experience and history; 3) change the demography of the staff.

17. In the first scenario the actor is perceived as an action-oriented person and his interactions are influenced during operations; in the second the actor is perceived as an individual with specific
psychological context and the ability to develop and adapt his context to a level more appropriate for the internet environment; or, in the third change the demography of the staff has to be changed.

18. The analysis can be reflected as follows. In the action oriented perspective – scenario 1 - the individual may be observed from three angles: the personality, the practical consciousness and discursive consciousness. Practical consciousness refers to the awareness of one's circumstances related to one's activity.\(^\text{37}\).\(^\text{[Giddens 1984]}\) Since the internet can have much impact on the circumstances – the reach and depth of practical consciousness - the challenge is to let staff manage this enlarged and more diverse environment more independently. It is assumed that this increases the level of practical consciousness and consequently the operational effectiveness of the actor. CIOs have mentioned several forms of governance practice of this approach:

- inviting staff to the decision-making process to enhance their knowledgeability;
- making things visible at a very early stage clarifies what is expected from staff, e.g. assign a budget very early in the process of initiative development to see expectations;
- moving from skill development to competency development through structuring the career path;

\(^{37}\text{In this thesis knowledgeability is often used as a synonym.}\)
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- promoting networking of staff in professional communities and their own organization to enhance practical consciousness and discursive consciousness.

19. The second scenario to enhance self-management is to focus on the psychological context of the Self. Now the observer sees an actor with properties (personality, beliefs, assumptions, perceptions) that can be developed. If these properties of the individual change, they change his behavior because choices are made according to prevailing beliefs and assumptions. The properties may be changed by communicating, by unique events, initiating and developing ongoing relationships, or in an accelerated way during workshops. Critical to this approach is to be continuously aware of the present properties, and at the same time to focus on opportunities to reassure or influence the properties of the Self. CIOs have told that the practice of this scenario may take several forms:

- organize on the job training; promote networking of staff in professional communities and own organization;
- develop the discursive consciousness of the management team through expressing one's beliefs. For example the comment in a meeting .... "now a technical intermezzo" ..... is quite different from ..... "IT is an integrated part of the business, which justifies its integration in management team discussion";
- develop leadership and management training to educate for the new characteristics of staff self-management in the internet era;
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- organize on the job training to build new assumptions, beliefs and perceptions about the way of interacting with the environment; by protecting staff from polemics with business indirectly perceptions of both business and IT staff are influenced;
- change the characteristics of the team-work compared to the traditional way of working, e.g. much more delegation to the first reports is needed.

20. A third way to enhance self-management is to change staff personalities from being focused on technical solutions and embedded in a limited closed organization, to being more communicative, process oriented and focused on the individual task environment. The practice of this approach took several forms:

- develop or change the unit demography of personality types by attracting new profiles of IT staff;
- review roles and job descriptions, succession planning, remuneration, penalties and appreciation.

21. The CIOs have proposed governance practice that connects the context (adoption of internet), the controllable frame (getting internet to the workplace), transformational frame (understanding new ways of working and requiring governance for developing practical consciousness), the individual (the self and personality) and the group (from department to community). The CIOs have shown several ways to resolve this challenge and suggested ways to prepare staff for the digital era. The individual and the controllable structure have been mentioned, but the other domains have been emphasized as well: group, on the job training (organized encounters to develop
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the transformational frame); develop knowledgeability or increase it by changing the demographics. Internet creates a need for more self-management. However, to ensure employees make choices according to the organizational goals and objectives demands also a more explicit management of the transformational frame as well.

Staff effectiveness

22. The challenge for this governance object is the development of practical consciousness and discursive consciousness. Practical consciousness refers to the awareness of one’s circumstances related to one’s activity. Discursive consciousness is the consciousness that presumes that the agent can give a coherent account of his activities and the reasons for them. He is able to put things into words. Unconscious refers to not being able to put things into words. {Giddens 1984} In case 1 the challenge implies that staff had to become more focused on the process and the customer. In case 2 staff had to get acquainted with a completely new world, the world of digital e-mail services instead of package services. In both cases large homogeneous groups had to transform their thinking and behavior. This could be achieved by developing the practical and discursive consciousness, on top of the transformation of the controllable frame.

23. Whereas in the first case the psychological context of the individual – his traditional way of working - were connected to a new way of working during workshops. In the second case, new insights and
ideas about future business models were communicated and thus traditional ideas were challenged – prevailing beliefs, assumptions, perceptions, new concepts. In both cases the message was to get the different logic internalized, and to develop a discourse around it to enhance the transformational frame. Development of a new discourse is important for communication about the new context and operational situation. An improved discourse leverages staff knowledgeableability and enhances the effectiveness of operations. In the terminology of Giddens the development of interpretative schemes (integers of language) enable the development of a new transformational structure of a social system: the new schemes bring the social system in a new state.

24. One of the CIOs narrated that in order to succeed in such a program leaders should have the capability to explain action and vision, and to connect the worlds of issues and managers, with the world of the wires and hardware. However, in both cases change managers were needed. They should also understand both worlds very well and work consciously and continuously for change for an extended period of time. The leader’s task is then to prepare the messages based on the vision, and facilitate the change managers in delivering the message. In both cases the programs are multi-year programs. These programs can really be compared to the creation of a new social system.
25. The progress of the transformation can be expressed in measures that show the development of staff knowledgeableability and values. These are considered necessary elements for creating successful new interactions. Both cases applied detailed monitoring of progress in the change process. The program of case 1 used Key Performance Indicators, and in case 2 an evaluation form was used to measure the progress per meeting.

26. In both cases the context changed, and consequently operational staff had to get prepared for the new situation. The change of context caused a shift in case 1, from product oriented to market oriented approach. This required new assumptions, beliefs and perceptions about what was important during the process, and what was not important. This change could only be realized by internalizing the new logic. The old logic by definition had lapsed. The change of the controllable frame (roles, change of process, from solution to result oriented) was less time consuming, but the transformational frame had to be aligned over a period of time in order to work effectively. In case 2 the change from the traditional to the digital world was tremendous. The change of context (e.g. from state-owned physical, to commercial digital package service) caused a shift in both the controllable and transformational frame. Here, first during a long period of time workshops in small groups were organized. The ingredients were: vision, change manager, triggers to let people think about the new digital world and develop
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the discursive consciousness. At a later stage when the technology to deliver the services became available, the development of practical consciousness was also needed. This was part of the transformational frame since it was part of the experience and knowledgeability of staff, which again required a long period of adaptation.

27. In both cases, leadership and learning were the key interventions. Leadership, to understand the change and develop a program as to how to transform and develop the different domains of individuals, structure and group. Learning, because a choice had to be made as to how to put learning into practice. Both chose here for the following form:

1. building a story about the new context,
2. choosing or acting as change agent and
3. organizing workshops to internalize the new situation.

The goal in both cases was to get staff to think about the implications of the new idea on their activities and develop their knowledgeability. In order to achieve staff effectiveness the governance of these CIOs focused on the transformational frame. It took a while and needed continuous activity, but was considered necessary to achieve the adaptation of change in context and achieve effectiveness in operations. Both learning and teaching were applied extensively.

Coordination

28. Coordination is the governance theme when tension arises between business and IT. Coordination is the activity to align the different
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needs of two or more entities within or between organization(s) in accordance with a pre-defined goal. Three different challenges have been reported which require coordination in the business and IT environment: when tension arises between strategy and client needs; when business and IT have opposing interests, e.g. due to technological complexity or Time To Market needs; when central interest opposes local interest, or global synergies oppose local interest. For resolution of these challenges, insights from all domains have been reported. However, some insights were dominant. These have been mentioned 4 or 5 times out of six. The following insights are supported most by the report of CIOs:

- Interaction has three domains that jointly produce an outcome - individual, structure, and group. These domains should not be dealt with in isolation, but as properties of the same interaction.
- Structure is divided into three domains: controllable, transformational and context. Constraints, delay and impact on interaction differ at each level.
- The controllable structure as well as the transformational structure is the subject of management.
- The transformational structure provides the climate for lateral alignment and effective information processing.
- Managers should condition interaction by explicitly organizing the controllable frame. In case the controllable frame cannot be developed, the transformational frame becomes more important.
- Outcome can only be valued in a cultural context.

29. Substantial support has been found for the insight that interaction is composed of three domains, and that the domains should not be dealt with in isolation, but as properties of the same interaction. Other insights with substantial support belong to the domain
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'structure'. Especially the distinction between the controllable structure, transformational structure and the contextual environment are very explicitly mentioned in CIOs' narratives. This conclusion has been interpreted from their role perception and their perception of what behavior is expected from the CIO. Hence, when dealing with tension and building coordination around it, awareness of the interaction domains and structural embeddedness is paramount.

30. Another critical aspect is the attitude during interaction subject to coordination. Open culture, mutuality and the statement that the CIO's colleagues are simultaneously his customers, are examples of assumptions and beliefs of the CIOs. Five out of six report to manage these attitudes - which belong to the transformational frame - simultaneously with the controllable frame. One may conclude that coordination is not adequately dealt with when only one of the two frames is taken into account. Coordination is apparently more effective when simultaneously with the controllable frame the right attitude is being developed, e.g. mutuality or an open culture.

31. Another theme is the complexity of large networked organizations. In these the context is always a complication. There may always be situations that cannot be dealt with, or that are out of your control. One respondent argues that large networks always have a complexity that cannot be controlled. One just has to deal with this uncertainty.

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32. Furthermore CIOs note that their tasks demand different roles. They have to be leader, consultant and account manager at the same time. Leadership is needed to provide guidance in the approach to resolving IT challenges. As a consultant the CIO has to build the right justification, explain the possibilities and mobilize the stakeholders. As an account manager he should make sure that IT is understood and that it supports the match of IT need and service. Finally there has been much support for the insight that outcome is valued in relation to the cultural context.

33. As regards the controllable structure the CIOs had specific solutions:

- be aware that the business case is the key mechanism for initiative acceptance;
- apply principles about the decision-making behavior;
- make sure to be a member of the management team;
- ensure a direct line to the authority;
- implement policies, standardization for cost reduction, financial reporting and global contracts;
- ensure focus in the business and ICT plan by limiting the number of issues to be resolved or large initiatives undertaken at the same time.

34. However, as indicated above already, providing a structure is not sufficient for governance. The value of the concept of a transformational frame has been confirmed by the reports that behavior is also a critical factor for success:

- establish an open culture which serves its purpose in this respect in a heterogeneous environment;
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• serve your colleagues as a customer;
• take all stakeholders into account;
• listen, don't tell the business what to do; and
• fight for the customer internally.

One of the CIOs argues that besides structuring also mutuality is critical for effective collaboration. He combined the two through application of zero budgeting in portfolio management. Each new project forced business and IT to have a new calibration of initiatives and budget, and enhanced the business and IT alignment.

35. In summary the respondents have mentioned four types of coordination mechanisms: conflict resolution, structuration of the interaction between business and IT, adoption of a specific role by the CIO and a specific attitude by IT staff. The former two belonging to the controllable frame and the latter two to the transformational frame, less visible and embedded. The CIOs suggested that the former and the latter need simultaneous implementation.

Process

36. A process is the sequence of activities and interactions that are required to achieve a pre-defined output. The CIOs have expressed in several ways what challenges can be met by managing the process. These challenges are: turning ideas into solutions, ensuring a proper alignment of business and IT, teaching staff to change their working attitudes from hierarchy to matrix, and getting support from the business. The cases support 8 insights spread over four domains of
the governance model: the interaction domain, the controllable frame, the transformational frame and learning domain. What has been reported to meet these challenges?

37. Only one insight from the interaction domain received substantial support. This is the insight that the three sub-domains (individual, structure and group) jointly produce the outcome of interaction. The interdependence between these three has been demonstrated by 4 cases. One of the CIOs argues that IT is based on human beings and success is based on trust. It all boils down to creating trust, trustworthiness, gaining credibility and confidentiality. This can only be achieved through small successes in interaction. Among other things, several items have been mentioned to contribute to small successes in interaction: a transparent distribution of decision-rights (controllable frame), a clear vision on what the drivers for processes should be (transformational frame) and ensuring that the right personalities are assigned for a task (individual).

38. How can structural aspects contribute to the effectiveness of interactions and activities? The cases support insights about both the controllable frame and the transformational frame. Three cases supported the idea that a transparent authority structure, which is part of the controllable structure, is critical for effective interaction. The authority structure was mentioned in conjunction with transformational and interaction aspects, which confirmed the
insight that the three levels should all be the simultaneous object of governance.

39. Also an insight about the transformational frame got substantial support. The supported insight tells that the transformational frame is a continuum. It is a non-visible stock of practical consciousness, discursive consciousness, assumptions and beliefs, vision, history, experience and expectations. This insight is in accordance with what has been found in the case reports. Respondents report about building trust in case 1, building trustworthiness in interaction in case 2, building credibility and applying principles as driver of the processes in case 5. The process drivers are: to collaborate enhances the stakeholder's decision-making; to ensure that staff become knowledgeable on the mid-term plan; to integrate generic aspects like SOx in the processes of the business; to identify whether the company has to be excellent or good enough in a new innovation. These items all contribute to the transformational frame that has a continuous influence on the processes. Duality of structure - processes are influenced by the transformational frame and the transformational frame is influenced by the processes - is supported by these cases.

40. In three cases learning is embedded. In one case by including the different stakeholders during the decision-making process. In another case by adopting learning on the job as a structural way for corporate to assist BUs. But also the drivers of a process may be
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considered as the frame for a continuous learning process. In one case the enhancement of knowledgeability is achieved by involving staff in the process of the mid-term planning. In another case learning is included by involving the business early when new generic aspects have to be adopted by the business, like Sox for instance. These are ways of working that a manager can determine himself. The manager adopts here the role of a learning agent. This supports the insight from the learning domain.

41. In summary governance in processes is a continuous activity. Credibility and trust is created during interaction. Only continuously generating small successes yields trust and credibility. Several mechanisms are available for managers to achieve small successes: transparent authority structure, visionary process drivers and embedded learning are some of the mechanisms reported by CIOs in respect of business and IT alignment.

Authority

42. Authority is the decision-right that may be exercised and accepted when decisions have to be taken. The CIOs have reported two mainstream challenges. The first one is the redistribution of authority. In one case is told about the process to centralize the IT budget, in another case the CIO focuses on the continued development of clear and simple rules in a large diversified networked organization. The second mainstream shows the development of authority. In a multinational, authority has to be
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gained without direct authority. In another case, the business had to be convinced that IT would join their decision-making, and business would join IT decision-making. This was needed in order to gain acceptance of the decisions taken.

43. In a third case decision-making was perceived adequate, but the CIO also explained a convincing governance mechanism had to be developed when conflicts arose. Finally one CIO reported how he developed acceptance of IT participation in the business decision-making cycle. Before, he had only had indirect access to it since he reported to the CFO who had to approve every proposal. These four cases show that authority is a balance between decision-right and decision acceptance. Effectiveness has to be gained continuously, and cannot be distributed or assigned to a position. What did the CIOs recount on this topic?

44. Redistribution of authority is not easy. It needs careful handling. In one case the CIO had to take advantage of a large re-organization to redistribute the authority. Here the right timing, a convincing story within the right context, resulted in the redistribution of the decision-rights. In another case, the issue is to ensure that the right can be exercised. This is the case in a large diversified organization, in which the CIO has the approval and authorization right for local projects, but practically cannot get transparency in decision-making, due to the large number of projects that have to be coordinated and approved. He even has to apply intelligence in his organization to
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support the decision-making process. He is convinced that large networks need a countervailing power that limits the decentralization and diversification. If this is not done business never becomes optimal, he argues.

45. The other four respondents have argued that authority has to be developed, and it needs continuous action to exercise it. All these cases have taken a development approach. Two cases recount the challenge of getting business involved in the decision-making, and two cases of getting authority rights exercised. To gain acceptance of the business, one case showed how gaining credibility by ensuring sound IT operations supports acceptance of IT by the business. Another case showed how the right platform for managers (invite only managers that have impact on the business) established at the right time (after the implementation of the ERP solution these managers were ready to join), contributes to an accepted mechanism for alignment of different stakeholders. These two cases deal with the development of an appropriate mechanism.

46. The CIOs of the other two cases were concerned with getting the authority exercised. In one large multinational this was realized by a mechanism that had nothing to do with the authority structure. It was clearly related to the promotion scheme of business unit managers that was only indirectly related to the corporate IT Board decision-making. The CIO exercised his power through his involvement in the promotion evaluation process, and the rule
within that company was that non-compliance with corporate policy could be sanctioned severely. This is close to the mechanism at a global pharmaceutical firm, in which the corporate CIO has the right to hire and fire the CIOs globally. This provides him with indirect influence on the outcome of decision-making at regional or local level.

47. Authority is easier if there is not an issue. It becomes a challenge if the issue is big, and much is at stake. Then participants demand strong and clear governance, and the credibility of the authority will be critical. This happened in another company, when the BUs did not want to comply, and the CEO had to find a convincing way to support the corporate interest. He funded according to the corporate priority directly from the bottom-line, 25% of the expected next year's profit. At the same time he developed a collaboration between the BUs by starting a shared product services platform. This reinforced the perception of all BUs that the normal procedures, the type of people and the new structures result in reasonable and fair decision-making, and that collaboration once established does not per se conflict with the BU interest. If the common procedures are not adequate, then there is always a CEO who searches for a reasonable exception procedure. This example suggests that the transformational frame in the interaction model becomes more important when potential conflicts are bigger.
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48. Substantial support has been found for insights that are related to the controllable and transformational frame. These areas apparently play a critical role in authority development or redistribution, the transformational frame even more than the controllable frame. In 5 cases the transformational frame is critical. Managers should be aware that the transformational frame is a continuum and often plays a decisive role. It has an immediate impact on the effectiveness of CIOs. Also the insight that in interaction the properties of the three aspect areas jointly - individual, structure, group - produce the result, and not in isolation, has been supported substantially in these cases. When reflecting the CIOs effectiveness, one should therefore reflect the situation in critical interactions, reflect on the individuals involved, on how structure is embedded and how the group norms and values support or disturb the process.

49. Another insight was not connected directly to the cases, but is yet supported by all cases that deal with the development of authority. This insight argues that authority development is a critical capability in digital organizations and multi-authority situations, be it the redistribution or the development of business IT alignment. In fact all these cases support this insight.

50. In summary the cases have shown that authority is easier to exercise when conflicts and stakes are limited. When these are bigger more attention should be paid to the acceptance of authority, or power. In network organizations there is usually acceptance, because more
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often power does not reach the conflict. Therefore in network organizations it is more important to understand how authority is developed than how it is distributed.

Choice and Decision

51. What are the challenges to enhance effectiveness of interaction in a digital world? Choice is the product of interaction between the emotional, political and cultural dimension of an individual. Decision is the product of the process that analyzes premises and draws conclusions about a business issue concerning two or more stakeholders. The challenge is how to make a new structure work effectively, or how to ensure that local managers get used to the idea that they also have to comply with corporate priorities. Or, how to ensure that in a very large diversified network organization diversity is constrained, and economies of scale can be achieved? These challenges need a focus on the attitude of individuals.

52. Two alternative approaches have been identified: take a learning perspective, or focus on the transformational frame. The learning perspective is feasible in smaller organizations, the transformational frame focus has been discussed in relation to a very large diversified multinational. The larger the network, the more management has to rely on the continuum of history, experience or events. This has been demonstrated in one case in a very large network organization. Here the CIO had a very mean reputation, and his sanctions could be very tough. Staff and managers were aware of the severe sanctions
and his reputation. However, besides this reputation and/or the sanctions, also a transparent distribution of authority was needed. The CIO noted that it must be made very clear that the overall goal would never be dropped. This had a governing effect on the behavior of staff.

53. The other case illustrates a completely different approach. Here the structure had been changed and the CIO took a learning perspective for the process. He had to ensure that the attitudes would change. He focused on building trustworthiness, creating a reasonable process and getting an acceptable – for corporate as well as BU – outcome. He adopted the process as the way of learning. During year one there was resistance, then after one year the idea was applied, and during the third year it became business as usual.

54. The other three cases focused on the conditions necessary to get the right decisions. One challenge was to get BU managers to accept the loss of independence due to centralization, consolidation and standardization. Another CIO mentioned the challenge to achieve the right decision and keep focus instead of changing direction as a pendulum from right to left. The third challenge mentioned was to have an arbitration accepted when business demanded much more than IT could deliver. Building trust, exchange of knowledge and a two way dialogue were mentioned as critical factors. For building trust the annual business planning cycle is very useful. It is a continuous process with much interaction between the different
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stakeholders. Another CIO mentioned the two-way dialogue as a way to build trust. For the arbitration and dialogue at three levels decisions have to be made: does it make sense to take the initiative; is IT consistency contained; what is the impact on the bottom-line. Knowledge has to be exchanged through the process that aligns these three levels of decision-making. However, this is not sufficient. It also has to be very clear where the power resides. There should be a clear structure of governance. This is easier said than done, since complexity also plays a role. Although power and authority may be at a central level, they cannot be exercised independently. Power at corporate level is also dependent on BU managers. It is always a mix of the rational and the power hungry. It is not about seizing power.

55. This section has demonstrated how governance of interactions leads to effective results. Managers should keep focus on all three domains of interaction, and embed these properties in alignment processes. Individual as well as group characteristics have to be manipulated. The cases in this section have also demonstrated the value of the distinction between controllable frame, transformational frame and contextual conditions. Finally to achieve the right attitude or the right decisions, the process along which it is developed is extremely important in ‘smaller’ organizations. The results of this process should be trust, knowledge exchange and transparency in the involvement of the different stakeholders. In situations where arbitration or complexity play a role, trust, knowledge exchange and
transparency are more important in a very large networked organization. In large organizations the *transformational frame* is more important.

**Inter-dependence governance**

56. Inter-dependence is the situation in which the existence of two or more events, assumptions, domains or actors have complementarities or a constraining or synergetic influence on each other. Three cases illustrate different types of interdependence: dependency between two business domains; dependency between the quality of the IT operations and the credibility of the CIO for the business; and the dependency between business and IT domains. In one case, the interdependency originated from the potential for economies of scale, in the other cases interdependency arose because business and IT were part of the same operations. In case 1, the approach was to recognize the opportunity, get an understanding of the potential synergies and develop coordination of a global technical infrastructure. In the other two cases, interaction between business and IT was developed, subsequently stakeholders became more aware of its interdependence, and were then reassured that it was being lived up to.

57. In case 1 the pivot was an assessment which created awareness at global level. The average cost of a server was more than 50% too expensive. However, that fact in itself was not strong enough without the use of authority. The fact and the authority were
interdependent. One has no meaning without the other. The assessment of server cost in all countries created awareness among business management, but not sufficiently to gain its support. The business did not have the understanding that besides stability also IT flexibility for growth was needed. The existing power structure prevented the desired result. Then the authority of corporate management intervened to take the decision that enabled global economies of scale, fast growth and stability. The exercise of the authority was justified by the fact.

58. In case 2, the interdependence has been identified between the IT services performance and the credibility and acceptance of the CIO at business meetings. The CIO focused on gaining credibility and on this he built his relationship with the business. He first developed seamless electronic mail and communication services in eight countries. Wherever one was, everywhere employees could get connected in the same way. Then the relationship was built by talking with business about business challenges only, and discussing IT when it hindered or enabled. He noted that Service Level Agreements were very helpful in developing the right assumptions and attitudes in the business domain.

59. The CIO in case 3 recognized that strong support from the business was critical for the success of IT operations. He suggested that they should start exchanging views between business and IT, and then agree what was good enough. He suggested that CIOs should ensure
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that the understanding of business developments should be refreshed at IT employee meetings, and the other way around. The refreshing of IT on business development could be done by organizing sessions on business strategy, and letting VPs explain the change in strategy and its implications on processes and content. The refreshing of business on IT issues can be done by organizing sessions on for example the impact of the Sarbanes Oxley Act on IT governance, and discussing the implications for the business.

60. Substantial support has been found for three insights into interaction. Both the distinction between individual, structure and group provides useful guidance for managers to enhance their effectiveness. Also the vertical distinction between the controllable, transformational and contextual frame has proven useful. The cases illustrate that the transformational frame is a continuum, and should be handled as a continuum, simultaneously with the controllable frame or interaction. In case two and three, the CIOs told about continuously showing the same behavior, and let this develop the desired attitudes and relationships. These cases have also demonstrated that CIOs need a comprehensive view of the situation, because the governance of interactions needs simultaneous action in the different domains. Interventions took place in decision rights and by managing the dependency through creating awareness in case 1. In case 2 and 3 the interdependency was dealt with by promoting interaction and embedding the coordination in it.
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Large Program Governance

61. A Large Program is a multi-stakeholder activity that requires focused coordination for a longer period of time and cannot be met by recurrent operations. The CIOs reported three challenges related to the creation of large programs. How to create a coalition for a large multi-year program and how to deal with the opposition. How to get BUs to work together for the first time while being accustomed to very independent operations, even competitive operations. How to deal with the different stakes of the IT department and operational units, in one case represented by a trade union.

62. The CIO of case 1 recounted how he mobilized stakeholders for a large SAP program. He proposed to build a sensible story, attach urgency from a practitioner's viewpoint, and manage opposition - using a trick if needed. He argued that it was quite positive to have the right balance in the program between corporate and local interest. This came about by the two systems that badly needed transformation: Finance and HR system. The last bit of opposition was countered by excluding them from the program until further notice. This was a "lie for its own sake" because he knew that there would not be a way back anymore. In case 2, the CIO explained which drivers to reckon with, and how to deal with them during the transformation. He emphasized the importance of connecting the individual stakes and the company goal and vision. The positive
impact of a transparent governance structure was reported as a critical success factor of the program. This triggered the rather spontaneous formation of communities of interest, supporting the governance process of linking individual stakes and corporate vision, which also played a role as a countervailing power when an individual was being too independent. In these groups individual could be confronted with the common goals and interest, and leadership then had a tool to point out that they were bothering many others. So when you put in: transparency of governance, sponsorship from business, leadership (ability to show the stakes, to show the vision, and make arbitration – say yes or no), change management and anticipation on change, you will succeed.

63. The same CIO had learned lessons on how to deal with project elements during large transformations in another setting. This case illustrates how dealing with technology and user acceptance and behavior separately in a $100 mln program can go wrong. He argues that governance is being in it together, and governance should focus on the needs and the risks, and their consequences for the partnership. Conflicting stakes should be prevented from causing win-lose situations. In this project the sponsor should have paid more attention to aspects of change management.

64. What insights are supported by these cases? The insight that governance should pay attention to the three domains in interaction is supported substantially. In one case no attention had been paid
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before (case 3) and this lead to a failure of the program. In another case there had been quite a positive impact of a transparent structure. This lead to community formation, and establishment of the balance between individuals and groups during the program. Also the connection of the individual to the contextual and transformational frame was illustrated. Arbitration at process level was organized by the larger process committees. Thus the individual stakes or individuals that too much go their own way are corrected automatically, or could be corrected when leadership shows how they bother many other stakeholders. This also supports the insight that in large programs one should pay attention to how conventions are being developed in larger groups. When looking at large programs from a qualitative perspective, one may conclude that knowledge sharing, distribution of power and the creation of values on decision-making need attention.

Knowledgeability

65. Knowledgeability is the competence of an individual to perform his tasks taking the social, content-related and economic perspectives into account. Knowledgeability is closely related to the concept of practical consciousness of Giddens. It is attached to the individual and refers to the action domain of the individual. Two challenges were identified by CIOs. One was situated in the context of a very large multinational. The challenge here was to leverage the potential economies of scale of the accounting department's knowledge on IT
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security. The other challenge was how to leverage the knowledgeability of experts in the IT sector to the BUs.

66. In case 1, knowledgeability was enhanced by changing the perception through a benchmark. This CIO used this method several times. The benchmark resulted in differences between the different BUs, and gave the opportunity to take advantage of the competitive attitude in the company. Knowledgeability was enhanced by the preparation of tools, and a thorough walk-through of the method for users. From the beginning, it was clear that the BUs had to apply these tools themselves. This approach succeeded in implementing an effective IT security policy. The score of the benchmark improved considerably in comparison to that at the start of the program.

67. In case 2, the CIO chose for a structurally embedded approach to change the attitude of a broad range of employees on information. The approach focused on training and guidance on aspects of information and systems, and connected this with policies of the Human Resources Department. It is not exactly known how he did this.

68. Case 3 illustrates how the corporate CIO enhanced the knowledgeability of BUs in the business IT alignment. He chose for a long term mechanism. Corporate provided expert support for specific BU initiatives. He stated that success was not due to the
expertise of the person, but to the right mix of personality and expertise. Furthermore the culture in the company was right for this type of program. The attitude which already existed of accepting support from other BUs or internal parties, was as important as the selection of the experts with the right personality / expertise profile. Although the results were very difficult to measure, he got very positive feedback on this approach.

69. Substantial insights from all domains have been applied to enhance the knowledgeability, except from the dependence domain. The conclusion may be drawn that to change a competence demands a well balanced approach between the different domains.

Human Network

70. Human network is the set of relationships that has a common stake, purpose or interest. Although internet enables and supports the easy maintenance of internal and external networks, there has been very little attention paid to looking at business and IT as a set of three different networks: the network at strategic level that consists of the management team, experts and supporting staff from both business and IT; the network that deals with the development and implementation of new initiatives; the network that is involved in managing the IT service delivery. In the object "Large Program" the importance of the individual-to-group connection has been illustrated. One would expect that more attention would have been paid to networks during the interviews,
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because networks are supposed to be the structural solution for coping with volatile environments. Although this has not been discovered in the narratives of the CIOs, in my view transparency of roles and transparent governance structures support the development of these networks. Also the maturity of the three “IT networks” may be seen as an indicator of the performance of the organization. This may be a nice topic for future research.

Before and after 1995

71. What is the difference between the periods before and after 1995? In four cases CIOs commented on this topic. Due to the adoption of Internet, the challenge was described by one of the CIOs as follows: “.... with mailing, collaboration and knowledge management tools every employee has to be self managed. He has much more freedom to act, but this requires also self-control......”

72. And another CIO stated that internet for him is one more communication channel. There was a shift in the trend. Internet has given an impulse to communication. Whether this has been attributable to internet is not sure. It certainly has supported a complete change in management style and culture. Before internet this company worked hierarchically in a French way. A report was first validated and then there was a discussion as to whether something should be done. Now there is more entrepreneurial thinking. Now a model of governance has been established that speeds things up, so now communication can be done more quickly.
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Agility is the most important result of internet. Therefore, the decision-making cycle has been reduced considerably. With internet discussion can much easier take place during the report validation, which has changed decision-making cycle.

73. Other views were identified as well. One CIO commented that it was more important to train the managers. It was not internet that changed our management style. It was intranet that changed the management style. From a governance perspective intranet is a very important technology. This was paramount for globalizing our company. Make intranet as a supply and demand for communication in your company. At that moment our company lacked international communication. It needed a service where management could share information. However, we had to consider that the people were number one. They had to adapt to a more international open culture that exchanges insights. For example: the company has VP's all over the world. Then it had the idea to put propositions on the internet and get the answers on the screen. Some answers got very high scores. These were elaborated 3 months later. Afterwards we heard from the VP's that they found it very difficult to talk to a computer screen. Generation differences have to be reckoned with as well. In order to exploit new technology people have to change.

74. The last case in which the impact of internet was discussed, told about the future steps his company should make. This company had
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a strategy to become a real multinational and the CIO commented that certain steps would have to be followed. There would be growth pains. What were the challenges? To get in-depth insights into the differences. Everybody talked about IT. However, the cultures of the different continents perceived IT very differently. This was difficult and needed much communication. IT had to be communicated very differently. An example: in Brasil I had to give a presentation. My communication was strong; however there was a discrepancy between verbal and non-verbal. The 2nd time I changed to more the Brazilian style. Much movement, much smiling, many small messages. The Germans would say: you tell me what to do, and if you can convince me then I will do it. India is very difficult. They are very intelligent. It is very hard to get into their feelings. Teambuilding and coaching are very difficult. Also the story of this CIO comments on the human aspect as the more important part of change and communication. Internet has just been a trigger and enabler.

75. The internet has had an impact on the potential of actors to influence their task environment, internally as well as externally. However, the real change comes from people who develop new capabilities with new communication technology. Some respondents did not attribute changes to the technology. Whatever the cause of the changes, what we have shown, is that the technology and the exploitation of it has changed the landscape of organizations
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rigorously, which demands new capabilities of both employees and managers.

Summary

76. First, how the interviews were analyzed has been explained. A case structure has been adopted from Gergen to analyze the interviews. By clustering the cases 10 objects were identified. These objects showed what governance tries to bring about. Insights from literature have been connected to these cases. This resulted in several insights which were identified most often. This set of insights forms the core of governance practice. They will be discussed in the next chapter.
Governance potential versus practice

1. For the analysis, the following concepts are used: narrative, insight, substantial insight, case, object, general practice potential, practice potential, CIO common practice.

Figure 30 Research process
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2. The 95 insights derived from the literature review represent the general practice potential, as proposed by the academic world over the past 70 years. How did we get to a picture of present governance practice? Eleven narratives are provided by the CIOs from which 39 cases have been derived. Analysis of the cases resulted in 10 objects of governance. An object is a concept or event that needs governance. Further analysis shows which cases have demonstrated support for any of the 95 insights. Each text unit that supports a specific insight has been recorded and captured with N6 software.

3. The frequency at which each insight has been supported by a case has been recorded. The set of cases that illustrate the governance of one specific object shows whether insights have been substantial for that specific case. If the frequency of one insight per object is more than 60% of its potential, that insight is qualified as a substantial insight. If the frequency of one insight accumulated over all objects is higher than 5, that insight is considered accepted by CIOs. Those substantial insights that have the highest ratio of frequency (substantial versus total frequency of support) in the 39 cases are declared part of CIO common practice.
4. Common practice is the frequency ratio of substantial insights / frequency of total support per insight (highest ratio is most common). If an insight is supported often in the 39 cases, but never becomes a substantial insight, then it is not considered as a common practice for governance, although it may be quite effective. If the insight is supported often, and a large share of this support contributes substantially to the governance of objects, the insight is qualified as part of the CIO common practice. In the table the common practice is summarized per domain. Group and Learning
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do not have qualified common practices, which indicates a great variety practices related to that domain. Therefore insights in that domain are considered a potential.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Substantial Insights per domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>1.1 1.2 1.3 1.4 1.7 1.13</td>
</tr>
<tr>
<td>Individual</td>
<td>2.1 2.2 2.4 2.14</td>
</tr>
<tr>
<td>Controllable frame</td>
<td>3.1 3.2 3.3</td>
</tr>
<tr>
<td>Transformational Frame</td>
<td>4.1 4.3</td>
</tr>
<tr>
<td>Group</td>
<td>None</td>
</tr>
<tr>
<td>Leadership</td>
<td>6.2</td>
</tr>
<tr>
<td>Dependency</td>
<td>7.3</td>
</tr>
<tr>
<td>Learning</td>
<td>None</td>
</tr>
<tr>
<td>Outcome</td>
<td>9.1 9.3</td>
</tr>
</tbody>
</table>

Source: CIO Survey and analysis, 2006 – 2007

Figure 32 Overview of CIO common practice

Common Practice

5. What is the value of drawing conclusions from this data? Are these conclusions generally applicable? What is the value of CIO common practice? Common practice is like the mean. It never exists. One may say the occurrence of the mean is nil. I cannot agree more. The occurrence of the mean is nil. However, CIOs are in a challenging world. People in general have a limited capacity to reflect and understand their complex practice. Therefore I see the value of this chapter mainly as a way to discuss systematically what happens
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during operations. The model and the insights may support that discussion, and challenge managers to think differently. Participants may seek debate to develop their discourse and practical knowledgeability. The insights provide meanings that are relevant to governance practice and hopefully advance CIO governance practice. What did CIOs tell about their practice?

6. It is unavoidable to have some interpretation in the description of CIO practice. Hopefully the following text will motivate the reader to investigate and challenge his or her own governance practice.

Common practice versus potential

7. The common practice will be discussed by the domain of the governance model. Then some concluding remarks will be made. Common practice is described based on the insights that have been identified as substantially supported by the CIO practice. The insights that have not been supported to that degree, are considered as governance potential.

Interaction

8. The most commonly applied insight by CIOs is that an interaction can be divided into three domains that jointly produce an outcome – individual, structure and group. It is not known whether this has been done consciously. CIOs seem to be in agreement that these domains should not be treated in isolation, because also attention is being paid to dependencies between the domains. For instance, in
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several cases CIOs have evaluated the fit of group characteristics with those of personalities and controllable structure. On the other hand, they did not show a substantial insight into the group domain. This supports the idea that it is likely they did not consciously apply this insight to interaction, but rather intuitively.

9. The insight that an economic perspective is too limited for the governance of interactions, is strongly supported by this investigation. It supports the view that in academic literature after World War II the economic perspective (and the containment of opportunism) in governance has been largely overestimated. This should open eyes. According to one insight managers may look differently at operations, and recognize the interdependence of interactions. One example in support of this finding is the refresh of knowledge to improve performance. One CIO recounted the importance that the refresh of business by IT on the major IT trends, and the refresh of IT by business on the strategy should go hand in hand. By doing both at the same time, there is the option to anticipate. There is interdependence between interactions in the two domains. This has been illustrated by several cases.

1.1 Interaction has three domains that jointly produce an outcome – individual, structure, group. These domains should not be dealt with in isolation, but as properties of the same interaction.
1.2 If one aspect area of interaction changes, the others should be reconsidered for fit: synergy, complementarities or trade-off.
1.3 The economic perspective is too limited for governance of interactions. Interactions are embedded in a social context, which is also a major determinant of its outcome.
1.4 Interactions should be considered as interdependent with other interactions.

1.7 By organizing the process, the manager influences the development of meanings and ensures exchange of knowledge. Focus means that the knowledge development is more effective.

1.13 A manager should be aware of the institution, and the different contexts that are brought together at encounters. Arranging and shaping encounters is a powerful tool to enhance development.

10. The insights that suggest that processes should be looked at as a means of developing meanings and exchanging knowledge, and the awareness that different contexts are brought together in encounters, has been recognized in the narratives of the CIOs as a substantial insight. For two reasons these insights should get close attention. First of all, the potential reach and number of encounters of employees have increased enormously in the digital world. This provides managers with new tools to shape the competencies or profiles of staff and prepare them for the future. For example, providing staff with the opportunity to connect with professional communities brings more knowledge into the recurring process. It also increases the practical knowledgeability of the employee, because he has the opportunity to exchange views with his peers. This enhances his awareness of his position in the working field. During the analysis managing contexts in the process and managing development of meanings appeared to be strong tools for influencing the effectiveness of employees in interactions.
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Individual

11. The fact that these insights have become substantial insights during the analysis supports Giddens' 'duality of structure' theory. These visualize the connection between the personality and the sociocultural environment. More importantly, these provide guidance for a manager as to how to deal with the interdependency between the individual and social context. The respondents demonstrated that most of the management practice takes place in processes and interaction. There the action is, and there the manager has the opportunity to shape and change the course of things, attitudes and beliefs of employees.

2.1 The individual has three domains: personality, practical consciousness (knowledgeability) and discursive consciousness
2.2 The psychological context of the Self consists of personality, motivation, beliefs and assumptions and perception.
2.4 The individual is connected to the institution through action and the constitution constrains action – duality of structure.
2.14 Group development can be enhanced by encouraging sharing insights and encouraging joint development.

12. As regards personality, several CIOs have recounted that present personalities did not fit well with the new situation in IT operations. They explained two alternative ways to cope with this, either by developing practical consciousness, or attracting new types of personalities. In one of the cases practical consciousness was developed by letting people explain in meetings what the implications of new values were for their day-to-day activity. In
another case, the CIO asked the staff at meetings to explain their roles and the decision-making process. After a long period these employees had developed a new attitude, or had learned to share how roles fit best. Besides, the increased consciousness about how to work with the immediate operational environment, the continuous attention for new values or roles, shaped and changed their beliefs and assumptions on how to conceive their own role. The CIOs discipline to keep this change going during a longer period and embedding it in day-to-day practice brought the desired result: different attitudes and enhanced practical knowledge.

13. There is a strong link to the group domain. Sharing insights between employees enhances the development of practical knowledgeability and at the same time develops discursive consciousness within the group. Both enhance the operations. However, it stood out that none of the group insights were recognized as substantial insights. Together with the underestimated role of three human networks in the field of IT, it is proposed that for CIOs this is a field with a high potential for improvement.

Structure

14. The CIO narratives demonstrate the practical value of a distinction between the three domains that influence interaction in different ways. The controllable frame, the transformational frame and the context. The controllable frame is easy to understand. KPIs, roles, technical infrastructure or information governance can be identified
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as factors that control interaction explicitly. Once in place, its consequences become part of the continuum, the transformational frame. The transformational frame is a more abstract concept than the controllable frame. The difference between the two is the visibility and the degree of control that can be gained on interaction by influencing the transformational frame. The context is a given, and is usually considered as a condition for organizations, and is not perceived as an effective subject of management. It is an area that has to be observed as far as consequences are expected on attitudes and behavior during interaction.

3.1 Structure is divided into three domains: controllable, transformational and context. Constraints, delay and impact on interaction differ. Transformational frame is the institution of the organization. Context is the institution of society.

3.2 The controllable structure as well as the transformational structure is subject of management.

3.3 Many parts of socio-cultural systems have free choice. Choice should therefore be at the heart of governance.

4.1 The transformational frame is a continuum. It is a not visible stock of practical consciousness, discursive consciousness, assumptions and beliefs, vision, history, experience and expectations.

4.3 A manager can enhance the knowledgeability of an individual or group by developing: media, languages and repertoires; appreciative systems; overarching theories; role frames.

15. The controllable and transformational frame are both subjects of management. The insights have visualized the abstract transformational frame and emphasize that continuous attention should be paid to it. The insights (see figure) show how to shape
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operations for more effective interactions. The transformational frame is, in this study, perceived as a not visible stock of practical consciousness, discursive consciousness, assumptions and beliefs, vision, history, experience and expectations. These items can all be influenced by the manager. Other carriers for development of the transformational frame are: media, languages and repertoires, appreciative systems, overarching theories and role frames. Although the CIOs did not use these concepts to explain their governance practice, they have used them implicitly. Awareness of the relevance of the transformational frame and knowledge of the means through which it can be shaped, can become a powerful tool for the CIO.

Group

16. CIOs have focused more on individuals and structure than on the group and the learning domain. This puts the spotlight on potentially a highly important area for managing in complex environments. The context of the CIO is developing increasingly into three different domains: strategic alignment, initiative development and IT Operations. Each domain has its own social network. The composition of each is quite different. As discussed in chapter 5, one may see these environments as three different human networks in which several disciplines and management levels share insights and make decisions. It is critical to the development of transparency in decision-making. This can be done by developing
authority and trust within these groups. Authority and trust are very close to each other. One could say it is an excellent opportunity to exploit a thorough understanding of group effectiveness. The effectiveness of these groups is the greatest challenge for the CIO.

17. Therefore the insights into the group domain provide a valuable set of approaches. As many others, these are also applicable in recurrent operations. Bring insights to the table, influence mental models, build a shared vision or ensure transparency in decision-making by developing an explicit style for decision-making. Although these insights have not been recognized as substantial, there are CIOs who have emphasized some of them. This suggests that they are relevant insights for the practice, but are underutilized.

Leadership

18. As regards leadership insights the results are puzzling. Although there have been 5 insights each connected to more than 15 cases (of 39), only one insight could be identified as common practice. A possible explanation is the large variety of insights for which support has been found by CIOs. Four insights have been identified as substantial insights, but none of these prevails sufficiently to be subsequently qualified as common practice. However, these four insights may still be considered as accepted practice.
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It is not a surprise that the manager can practise governance by influencing interaction as well as the transformational frame, as noted in the first insight. There is something more important for managers to realize. They are not only the person that shapes interactions and either consciously or unconsciously shapes the transformational frame, but they are themselves also part of that game. How does their personality fit in interaction in the three critical domains — strategic alignment, initiative development, IT operations? What is their practical knowledgeability? Can they enhance the discursive consciousness within these three IT domains? These items will also largely determine effectiveness of interactions. The question is: to what extent can they take advantage of the influence they have on these factors as a leader?

6.1 A manager is a co-producer and observer of the object of governance at the same time.
6.2 Both the interaction as well as the transformational frame is a subject of governance.
6.9 Managers should condition interaction by explicitly organizing the controllable frame.
6.10 Managers should be aware that they can co-produce the transformational frame, and they should realize that they have an advantage over others in the organization.

19. The key word is teaching. This has been emphasized by one of the practitioner's reviewees. He argues that learning is important, but teaching is as important. Connecting this insight with the findings of this study makes sense. Teaching can be a continuous activity by a leader. He may focus on the three social networks in the IT domain. In these domains he may explain continuously what is expected.
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during interactions, which roles are expected, how conflicts should be resolved, or he may enable certain roles to develop into trusted roles.

Dependence

20. Cases have demonstrated the importance of a comprehensive understanding of business operations and its impact for the ICT infrastructure. At least 18 cases support this view, and in four objects this has been considered as a critical factor. This is supported by some CIOs who have argued that one should not talk about IT with business, but about business and only about IT when it enables or hinders the achievement of its business goals. How can managers then comprehensively describe and visualize their business? One view is to see the comprehensiveness as an integrated view of dependencies. As discussed extensively in this thesis, the integrated view is not only about activities, technology and people. The comprehensive view is about how these are interrelated. Understanding the relevant aspects of activities, technology and people helps. However, to understand the performance the connection of these with the transformational frame is critical. A view of the business as a set of interactions and an interplay of groups is the paradigm. The transformational frame is the strength of the group, it is the visualization of the practice and character of the group. Development can be visualized through the transformational frame.
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21. Managers should envision which are the key groups and sets of interactions, define their roles and then focus on the interactions and group dynamics. This is how inter-dependence can be managed and become a vehicle for enhancing performance.

| 7.3 Managers should focus on: vision; the distributed business operations; understand the implications for ICT infrastructure; understand the new business capabilities; understand the capability to manage and coordinate distributed processes; understand how revenues can be shared |

Learning

22. No common practice has been identified in this domain. However, 4 insights have been supported by more than 5 cases. The insight that the transformational frame and its institutional context have a central place in the learning process, and the second insight that managers function as learning agents for organizations, determine whether questioning premises and assumptions of the organization is allowed. These insights give guidance to managers as to how to integrate learning in their current operations. The other two insights that knowledge is not an individual possession and the learning of skills is both an individual and a group aspect, further enrich the meta framework for the learning policy of a company. In my view it is odd that CIOs have not commented more explicitly on this topic, since the development of staff capabilities is one of the most critical issues in the IT sector. Capabilities are structurally scarce due to the existence of a large variety of qualities. One way to enlarge the learning capacity is to connect specific internal capabilities to external professional networks. Therefore the researcher proposes to
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embed learning as an explicit policy and to ensure that it is more integrated in governance practice.

Outcome

23. Two insights have received the qualification of common practice. They have been supported in many cases and are substantial in 6 of the 10 objects. Firstly, it was found in literature that cultural context is a condition for the assessment of the value of an initiative. This insight is best explained by an example. In one case the corporate CIO supported the BU IT departments in their alignment with business. He had chosen a training course and conducted an on the job program. By being on stage jointly with the BUs, more experienced professionals could demonstrate effective practice. Although it was an expensive way to share insights, and the results were soft and difficult to measure the company accepted the justification partly because it was the culture to accept support from other parties in the company. He had very positive feedback on this program. This case suggests that outcome parameters and culture are interdependent, as has been concluded by Gergen as well when he proposed the structure for a good narrative.

24. The second substantial insight is the distinction of the five parameters that co-produce the properties of the system. This one is also supported by a large array of cases. It is a useful distinction, since often two or more properties were recognized as a valued end point of cases. It was suggested that these five dimensions of
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properties should be kept in mind while goal-setting is at hand or new initiatives start. In literature it was also found that it is generally accepted that the economic perspective often remains the dominant perspective.

9.1 Outcome can only be valued in a cultural context.
9.3 Only five parameters co-produce the properties of the system: power, wealth, beauty, knowledge and values.

The CIO practice pattern

25. CIO practice shows emphasis on the structure and the individual domain. Group domain insights are underutilized. This suggests that there is a great deal of potential for increasing effectiveness of interactions. Also learning and leadership are underutilized. Leadership is applied implicitly, but there is still more potential to exploit the insights. Learning is the overlooked part of the practice of CIOs, keeping the critical situation in the sector in focus. In the outcome domain CIOs have often indicated more than one effect on outcome. Knowledge and value are frequently included, and also power (if considered like authority) is mentioned often. From a governance perspective, group, learning and leadership can provide a leverage for producing the transformational frame, which eventually determines performance. There is high potential for improving CIO practice. It is my view that this conclusion is applicable to other roles in digital organizations, because more often employees have to play different roles at once, as the CIO plays the leader, the account manager and the consultant at simultaneously.
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CHAPTER 7 - EPILOGUE

1. Now the research questions enter the scene again. What are the answers?

2. The digital world changes from hierarchical organizations towards organizations that rather resemble network organizations. What is the prevailing governance practice of managers in network organizations?

   a. The respondents all agreed that the world resembles more like network organizations then before.

   b. CIO’s practice governance with more focus on the individual and the structure of interaction, of which respectively 4 and 5 insights were qualified as CIO common practice. The controllable structure included three insights as common practice, as has the transformational frame. Group related insights have been supported by 4 – 10 cases per insight. However, none has qualified as a substantial insight. Which means that in none of the ten objects a group insight is commonly accepted or understood as critical. Therefore it has also not been included in the common practice of CIOs.

   c. The same applies for learning insights. If one takes the perspective of the individual that needs more self-
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management competency due to a change of task environment, learning should be recognized as a critical domain. At present CIOs underutilize learning insights. This is a surprise considering the problems IT had over the past decades to follow the changes in business and the development of capabilities.

d. The cases have further supported the insight that a more comprehensive view is required for governance in a digital world. Comprehensive means that

- vision should be linked to operations,
- interactions should be considered as interdependent with other interactions,
- individuals are embedded in a socio-cultural context,
- context constrains interaction
- economic perspective is only one of the qualities of outcome.

e. Dependency increase between individuals and processes demands that the economic perspective is considered as just one – although the most important one – quality of outcome. As regards the goal setting, CIOs are more concerned with values, knowledge and power, and realize very well that the outcome is more than looking at interactions from economic perspectives. Also support has been found for the insight that value of an outcome depends on the cultural context.
3. *What is the context for internal governance? What characterizes the difference in context between the period before and after the adoption of Internet?*

f. Some explained that they did not see much difference in governance. Others have explained that the context of employees has changed dramatically. Employees should get prepared for much more self-managed operations, with more focus on his task environment. This view supports the need that managers should focus more on the management of relationships, and the attitude of the individual during interaction.

g. The manager has got more potential to influence effectiveness of interactions. This has been demonstrated by the CIO narratives. At first because the employee is more influenced by his environment and if operating well can benefit more from other expertises and peer experiences. Secondly collaboration and communication is leveraged by the digital environment with internet and intranet. Thirdly the decision-making cycle is much shorter. These factors change the practice of management. More opportunities exist to manage through the transformational frame, because reach and intensity of interactions have a high potential due to internet. group or community formation within the company is also possible.
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4. What is the object of internal governance: the organizational entities (individual/unit/organization), the relationship or the interaction between the entities? Simplified: the individual, the relationship or the interaction.

h. Before 1995 managers had less potential to govern through individuals and the controllable structure. However, after 1995 individuals can be managed more effectively because of a higher intensity contact and through more easier transformational frame, learning and group development, than by direct management. This change is a real challenge for managers. In one multinational the CIO narrated that training should start at the management level how to deal with this change, and what it would mean for the individual.

i. The individuals. The management of individuals is easier through transformational frame, learning and group development because individuals have a huge reach through internet/intranet, and can easily participate in specific communities. By focusing more on these domains than before managers can enhance their effectiveness, and exploit the potential of the digital world. Partly they can enable this by educating the individual for self-management, partly by providing budget to participate in communities related to his field. The latter will bring knowledgeability and enhanced
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role awareness. These two aspects will make him more effective in relationships and interaction.

j. The answer on the question is: all three are object of governance. Relationship and interaction can be managed by allowing employees to develop relationships or have interactions. Or, specifically to prepare them to take advantage of the relationships in the right way. By allowing to engage in relationships or to have recurrent interactions the manager can influence what transformational frames are brought into the operations.

k. In IT Operations this may be implemented by developing social networks around IT processes, or networks around the topic of strategic alignment. However, several respondents have argued that this is not sufficient. Also a transparent authority structure is needed. Especially network organizations have to be clear who has the decision-right.

5. *Which factors have been identified in academic literature as relevant for governance? What is brought to the situation by managers in practice?*

1. See Chapter 4 and Appendix A_1 Governance Potential

6. *How do these factors relate to each other? Can the governance situation be visualized in a model?*
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m. This is not easy. However, what may be useful is to mark the key concepts that are generally used in common governance practice. Below is an example that comprises the patterns of two scenarios to develop employee self-management: a multi-year change process by developing the transformational frame or structurally change roles and related competency.
### Governance in CIO Practice

#### Employee self-management

**Key concepts to understand and govern social dynamics**

<table>
<thead>
<tr>
<th>Social Perspective</th>
<th>Agent</th>
<th>Social system</th>
<th>Account of action</th>
<th>Social Domains</th>
<th>Tools</th>
<th>Constraints</th>
<th>Development</th>
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<td>Embodied frame</td>
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<td>Consciousness</td>
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<td>Discursive Decision-making Self-narrative Transformational</td>
<td>Values Budget Meaning</td>
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<td>Network</td>
<td>Discursive Social Process Annual report Context</td>
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7. **What are ways for the manager to influence interactions? What patterns can be identified in the governance practice?**

n. A manager should focus on all aspects. However, he does not have to apply them. Sometimes successful governance took place without including all the model domains. The following styles may be recognized:

- Social system development: personality, knowledgeability, discursive consciousness;
- Social process: individual choice, decision-making structure, decision-making process;
- By giving account with motives, reasons and self-narratives;
- By managing different domains: agent embodied psychological frame, controllable frame, transformational frame;
- By applying different means: developing signification and communication, coordination mechanisms, or values and sanctions;
- By imposing constraints or expectations: contract or values, role, budget, goal, purpose.
- By developing a new transformational frame: interaction, convention, meaning, (culture).

8. **What is the desired result of interaction?**

o. CIOs have to manage much to achieve power, value and knowledge enhancement. Economic perspective is always dominant, but it should not be focused on without the other qualities. If too much emphasis on one of the qualities
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occurs, then results will be biased and undesired or unintended results encountered.
CHAPTER 8 SUMMARY AND CONCLUSIVE REMARKS

Problem statement

1. Digital technologies for providing information and communication have changed management practice. External signals and managers' observations have increased in number, reach and dynamics. The combination of these aspects caused a crisis in governance by hierarchy. There was a natural limit to its effectiveness. On the positive side digital technology enabled new ways of working, not constrained by geographic location, which lead to more densely integrated practice, caused by the virtual proximity of different hierarchies and the presence of different roles during operations. On the other hand the decline of effectiveness of contracting as a means to gain control over executives and employees in the interest of shareholders, has made residual rights, and consent of employee much more important. How do managers deal with these developments? What can they do to achieve effectiveness in governance? This research has focused on the internal logic of organizational operations.

Research approach

2. The premise of this research is that governance is most effective in interaction. This research provides a model for practitioners to
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reflect on the effectiveness of interactions. The model has been
drawn from insights from four theoretical strands: the transaction
cost theory, the contingency theory, systems approach and social
theory. The practice of a particular group of practitioners – Chief
Information Officers – has been investigated with this model. This
group has been selected because they are embedded in a network of
relationships in which they have to alternate distinct roles. Since, in
the digital world, it has become more common that employees have
distinct roles, the understanding of their governance practice is
expected also to yield insights for other positions - than CIOs - in
network organizations. This research may therefore provide a
reference for other positions as well.

3. With this model as a starting point the original approach has been to
develop hypotheses and investigate acceptance. However, the
research objective to acquire an understanding of “governance
practice” in general, and “effectiveness of interaction” more
specifically, would not be achieved unless > 15 relationships
between the elements of the model had been dealt with. A mission
impossible under the circumstances. The second reason this
positivistic approach was abandoned is because the objects of
research would have had to be isolated from their contexts. This
would have made it impossible to investigate the holistic character of
governance. Since it was the ambition to visualize the holistic
character of governance practice and at the same time focus on the
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dynamics in interaction, this approach was not appropriate. In terms
of Lee the following approach has been taken. First, a subjective
understanding has been developed by reading literature and
reflecting on assumptions and beliefs from experience. This
subjective understanding provided a reference for possible field data.
Through this subjective understanding the narratives of respondents
have been analyzed. Based on this analysis an interpretative
understanding has been developed of what the common practice of
the respondents is. The collection of field data has been done
through narratives, because these are the most enriched way to get
an account of practice. Since the respondents have not been guided
or directed, they have given their accounts based on one question:
what do you do to govern?

4. For the investigation 11 CIOs were interviewed. The respondents
were provided by the EuroCIO network, which has given
wholehearted support. The respondents were required to have been
in management practice for more than 10 years, and to be from
distinct cultural backgrounds. This profile is assumed to generate
more generalizability on the one hand, due to the diversity in
culture. Furthermore it is expected that experience of more than 10
years gives the respondents a more explicit view of the difference
between governance practice before and after the adoption of
internet. This would presumably have a positive impact on the
quality of the narrative. The introduction before the interview

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suggests that CIO management practice increasingly resembles a network of relationships between business and IT, between different professionals, between project team members, between different management levels and between different disciplines. How can CIOs manage such a complex network of interactions for effectiveness?

The 11 CIOs have provided a unique account based on their own experience and knowledge. This research has analyzed the accounts with the interaction model as a reference, and has developed a way to describe common practice. Furthermore a method has been developed to visualize potential practice, and visualize what managers may do to enhance their governance practice.

Interaction model

5. For a systematic investigation a model is needed. Interaction is presumed to be the core object of governance. Therefore, first the aspects of interaction have been identified: individual, structure and group. However, these should not be treated in isolation. In systems thinking interaction is perceived as one holistic piece that should not be cut into parts. A characteristic of interaction is that it results in more than the sum of the properties of its parts. Its outcome has an emergent property. Therefore if governance is to be visualized, one should also identify the different characteristics of outcome. These have also been found in system thinking. Five characteristics have been found in literature. The result of intervention in a social system
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may have impact on the wealth, power, knowledge or values of the system.

Figure 34 Interaction governance model

6. Since interaction is embedded and inter-dependent with the socio-cultural context, the context had to be positioned in the model as well. To do this structure has been stretched outside the interaction domain. It should look more like an extension that originates from or melts with interaction. It melts with interaction to express its continuous presence and influence. After having studied the system theory, it was decided to make a distinction in the external structure between the controllable structure and transformational structure.
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7. The transformational structure is the second key part of a governance model next to interaction. It has been included to visualize history and experience, and to provide the understanding that it is an area to which proprietary insights belong and which can be seen as a target of interaction management. The transformational frame conditions the interaction, but is not a visible part, and can only be influenced indirectly by consistently influencing other actors as regards their views, assumptions, beliefs or appreciative models.

8. Then the means of governance needed a face as well. Therefore interventions were identified. The intervention should have a direct impact at least on one of three domains. For an indirect effect - shaping the transformational frame - repetitive and continuous action is needed. Individual, group and structure are all influenced by at least one of the three types of intervention: leadership, change of inter-dependency between units or the learning frame. Leadership has more impact on the individual, dependency management has a more structural impact on attitudes and learning has an impact on both individual and group aspects.

9. The model has been constructed in a process view: interaction can be conditioned by interventions, and results in outcome. Continuous interventions - or, agency - can have a deliberate effect
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... on the transformational frame, and in a longer term on the institution of the larger social system. Hence, there are two effects of agency: outcome in a short term, and institution shaped by the feedback and observations from outcomes.

10. The research has focused on understanding what role each domain played in the governance practice of CIOs. When this can be visualized, both the common practice as well as the potential practice can be expressed.

Research conclusion

11. CIO practice focused more on the controllable frame and the individual domain. The insights related to the group domain and the transformational frame were recognized and applied by several CIOs. However, this was not done consistently by these CIOs, and also not sufficiently to consider it as a common practice for all CIOs. Only one CIO has been identified as applying the social view more explicitly. Apparently social theory – the area where most of the insights in these domains originate - has value in their governance practice, but is not commonly recognized.

12. CIOs have narrated several times about the importance of learning and teaching aspects, which supports the belief that a social approach indeed has a potential in governance practice. Therefore the potential for governance by CIOs should be sought in applying insights belonging to the group domain and the transformational
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frame, and insights into the intervention domains that influences these.

13. Can the governance pattern of a specific object or CIO be visualized? Yes, it can. The pattern can be visualized with the identified concepts (see table). The concepts support the governor in his appreciation of the situation and his areas of influence. These concepts also support reflection on his practice. The pattern can be recognized either for each CIO, or for each object. This may yield insight into what concepts best describe a common practice or a governing practice applied to one of the ten governance objects. The potential practice is then to exploit the insights from the other domains more widely. In this research the shaping of the transformational frame is proposed as an effective way to improve outcome. CIOs have done this mostly while being unaware of how they influenced practice. The key concepts may be applied to understand the pattern, and the insights may provide a transparent guide as to what to do in practice.

General findings

14. Since Adam Smith (1775/76), academics have investigated how exchange relationships contribute to wealth or development. Coase (1937) concluded that the governance of relationships could be coordinated by creating a hierarchy, which substitutes many contracts per exchange for one contract for many exchanges between employer and employee; or, it could be coordinated by
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price to coordinate exchange relationships in the market place. Since
the 30s firms have been the dominant paradigm, and governance has
focused on the governance of firms and their exchange relationships.
Since the 80s the paradigm has changed again due to the adoption of
digital technology. Now the paradigm of the network arose as a
third form of coordination. The common denominator of all these
paradigms is that they try to manage the effectiveness of
relationships on the outcome of activities.

15. Initially focus was placed on the economic aspects of exchange.
Although Smith and Coase recognized that this is a simplification of
reality, Willliamson (1975-1992) did not consider the economic
perspective as a simplification, and he focused only on economic
transactions. He attributed the outcome almost completely to
economic factors. His critics contend that he overestimated
authority and overestimated the existence of opportunism in
transactions. There was no place for other factors. They argue that
social aspects are just as important in explaining outcome.
Granovetter (1985) has demonstrated by his analysis the
embeddedness of transactions in a socio-cultural environment. Also
the development of organizations into networks instead of
hierarchies, has made social aspects a more determining factor of
outcome. This view is also supported by the contingency theory.
Volberda has shown that flexibility is partly caused by
organizational design and partly by management capability, which
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by nature involves social aspects. The findings about social embeddedness and the importance of the management capability justify the inclusion of an analysis of systems theory and feedback mechanisms for a better understanding of the behavioral aspects.

16. Since governance is meant to influence the outcome of organized interactions and these interactions are based on the participation of human beings, one may also say that the object of governance is a social system. Giddens (1985) has developed a theory on the production and reproduction of social systems. His theory has been of great importance for this thesis, because it has facilitated the integration of all the views studied. He connected the individual, the encounter and the properties of the socio-cultural system and developed a theory on the production and reproduction of social systems along these lines. Now the goal of governance can be perceived as an action to transform a social system into a different state. This has provided this research with a frame to investigate governance without decomposing reality into distinct pieces, which can never be integrated again.

17. It was further found in literature that the outcome of governance can be expressed in several qualities, although the economic aspect is almost always the dominant one. Other qualities are power, value, beauty or knowledge. In this research, the non-economical factors appear to be as important. Together they shape the transformational frame through the feedback effect of the outcome on the
transformational frame, which, in turn, determines for a large part the effectiveness of interaction. The transformational frame is the warehouse of the human mind, which stocks experience, history, assumptions and beliefs. This transformational frame plays a key role in the governance of social systems.

18. Both the enabling as well as the constraining effect of the transformational frame is the pivot of the interaction model. It explains how the internet and intranet have had an accelerated impact on the transformational frame. This impact has grown since the introduction of personal computers and the introduction of electronic local area networks. However, at first this took place only within limited geographical space such as buildings and compounds. However, the internet and intranet have made the scope and intensity of communication almost infinite in global space. That is why this thesis attributes so much importance to the year 1995, the start of a new era.

Model specific findings

19. In the CIO accounts ten governance objects could be recognized. Apparently CIOs see these ten as the area in which steering is necessary. The ten objects are: employee self-management; staff effectiveness; authority; process; coordination; choice; decision; inter-dependence; large program; knowledgeability. Each object is related to several cases, which have been analyzed within the frame of the interaction model. If for one object an insight has been
supported by sufficient cases, it is considered a substantial insight, or one that can be called a common practice for that object. Furthermore, the objects were instrumental in identifying common practice. Common practice is what has been recognized in the cases. Potential practice is what has not been recognized as a common practice in the narratives, but was proposed in literature. It may still be practised by some CIOs, but not sufficiently by others to be accepted as a common practice. In the next paragraphs the highlights of common and potential practice are reported per domain.

20. Interaction. CIOs are well aware of the interdependency between different interactions and between the different aspects of interaction. Furthermore, their narratives have demonstrated that they perceive the economic aspects as being too limited to drive their governance practice. The development of values, knowledge and power balance is considered as important. Meanings and knowledge can be developed for instance through organizing processes. From the 15 insights recorded during the literature review, 6 have been recognized as common practice. A manager has apparently more possibilities to shape the climate of interaction than he is aware of. He could take the role as a learning agent of the organization; he could show that he is prepared to learn himself by challenging his own assumptions and beliefs; he could question the conditions of the present situation; he could shape more actively the encounters to enhance development, or could use evaluative
dialogue to create a more collaborative approach. These ways of influencing interactions have not been recognized explicitly in the narratives, and may therefore be considered as potential practice.

21. **Individual.** Two substantial insights show that the individual has been visualized from four different perspectives: the personality, the practical consciousness; discursive consciousness; the psychological context of the Self. The narratives have demonstrated the recognition of these two insights, and demonstrated that they are common practice. However, the respondents were not explicit in their narratives as to how these can be applied for more effective interaction.

22. Two other insights have been recognized as common practice. One that shows that the individual is connected to the institution, and another which shows that group development can be enhanced by sharing insights. Some other insights provide a clear potential, e.g. “the Self is shaped by actions, narratives and social processes” and show the way to influence practice. They also seem not completely aware of the insight that: "...... "the seed of change is in every act”, which makes every action tiny or big, a critical one.

23. In total 4 of the 16 insights have been supported by the narratives. The major value of the insights in the domain ‘individual’ is the visualization of the connection between the individual and his
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evironment, either through immediate interaction or through its socio-cultural context (duality of structure).

24. **Controllable frame.** One of the widely accepted models of IT governance by Jeanne Ross and Robert Weill proposes a structure for IT governance. This structure is static, and does propose in a limited way how to deal with dynamics. It would be positioned as a controllable structure in the interaction model. Their comment on dynamics is that the different mechanisms applied have been numerous, and no limited list for best practice exists in this respect. Based in this research it may be proposed that the controllable structure is important, but it is not yet sufficient to become a top performer. To understand how outcome is obtained another insight is needed. They have commented on this at the end of their book, where leadership and managerial aspects have been discussed. These aspects relate to the transformational frame and the larger socio-cultural context and should be well understood to become a top performer. The insights presented in the studies of Ross and Weill support the view that controllable is only part of the success. Their insights seem to support the view in this thesis that the transformational frame is a necessary complement.

25. CIOs have a common practice in that they distinguish the controllable structure from the transformational structure and context. Most respondents acknowledge that the first two can be influenced, but it does not seem obvious for them to tell about it
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explicitly. Furthermore insights on how to deal with interdependence and how to influence the different areas have not been explicitly supported. This research suggests that getting a better understanding of the transformational frame and its interdependence with the controllable frame and the individual, is expected to enhance governance practice substantially.

26. Group. CIOs did not talk explicitly about group management, although the IT community can be divided clearly into three domains. Each domain represents a social network of relationships: the strategic level; the initiative development domain; and the IT operations domain. It is an area that has high potential for enhancing governance practice. Groups have specific sets of interactions which can be shaped. Groups have roles, or have stakes. Group interactions can be shaped by teaching (leadership) or learning practice, both impact individual and group effectiveness. Leadership and learning can therefore be considered to be high impact interventions on the effectiveness of the CIO practice. The focus on governance of specific group interactions is recommended. It puts focus on shaping key interactions between different group members, often of different disciplines and with different stakes. Moreover shaping group effectiveness may be considered as an intermediate level to shaping the transformational frame.

27. Groups are a good foundation for shaping knowledgeable and discursive consciousness, both part of the continuum that should
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provide the climate for effective operations. The controllable frame can be seen as the enabler of this approach. The conclusion of this research is that group focus in governance is a key to effective governance in a digital world, but on the other hand it is seriously underutilized.

28. Leadership. CIOs have a common practice. They share the insight that both interaction as well as the transformational frame are subjects of governance. How this is done is not stated explicitly in the terms provided by literature. This does not mean of course that the insights from literature are negated. However, it does mean that the language from practice and literature seems difficult to become congruent. The core results of this research are the concepts that connect individual to transformational frame on one side, and individual to group on the other. These are critical for understanding how leaders impact outcome, because these concepts visualize what leaders bring about.

29. In the terms of this thesis leaders can influence interactions directly and indirectly by applying them, directly by teaching stakeholders how to behave in interaction, indirectly by providing the stakeholders with a learning frame that enhances or constrains their behavior. The influence on both individuals and interactions provides the basis for development of the transformational frame. If interactions are clustered around one interest group (e.g. strategic alignment; initiative development; or, IT operations), focus on
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group effectiveness can be a leverage to influence the transformational frame, which in turn provides the right climate to produce economic results, values, knowledge or power.

30. Dependence. The narratives have supported the view that a comprehensive understanding of business operations is a key foundation for effective governance. The research suggests that this is best achieved by understanding the dependencies between individuals, interactions and groups. Dependencies belong to the transformational frame, but are usually founded on the controllable structure. The controllable structure is, for example, the key performance indicator (KPI) structure and the way performance is appraised. The KPI structure is clearly visible, but the way it is applied is determined by the climate or culture of the organization. Explicit coordination, as proposed by Clemons, to coordinate two hierarchies which are inter-dependent in a supply chain, enhances the effectiveness of interactions in the supply chain, because there is a focus on win-win, not lose-win. Or, Consultants and Account Managers have their own target, but they are still dependent on each other. The shape of the transformational frame (e.g. how managers deal with the figures at the end of the year based on the grey areas) for their interactions determines at least partly the performance. In brief dependencies have a continuous presence, are often founded on controllable structures and have influence on the performance. Changing dependence is therefore a potential tool for intervention.
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31. Learning. No substantial insight has been identified in the learning domain. It is therefore proposed that learning should be explicitly included in CIO governance practice. It is strange that no substantial insight has been identified in this domain. It is a great challenge for capability development to keep pace with technological development. The major issue for CIOs is the scarcity of skills and capabilities, and not only the technical skills. For example the capability to focus on a task environment instead of technical solutions is something that can be learned. This would require embedded learning, not external training. Embedded learning is recognized in this thesis as having great potential in the CIO’s area of responsibility. Several insights provide a way to perceive learning as a vehicle to connect the institutional context to the transformational frame, the role the manager can play and how learning can be linked to the development of individuals and embedded in interaction. The analysis shows that CIO practice has recognized this potential because it was identified in 10% of the possible insight-case connections. However, this is not sufficient to become a common practice. The insights found in literature may provide a foundation for the learning practice in the IT domain of organizations. These insights can be reviewed in the Appendix A Governance Potential.

32. Outcome. Much support has been found in the narratives that “outcome” is not one dimensional, but multi-dimensional. Therefore
it is fair to conclude that this is a commonly accepted idea. On the other hand support in literature has been found that the economic outcome is the more dominant perspective. When an IT department has been outsourced, the economic perspective is often dominant because the contract is constructed in that way. Although this perspective is dominant, it also appears that a great deal of knowledge, value and power change is needed to realize the economic expectations. This is demonstrated because the transformation of processes is often included in outsourcing contracts. This supports the value of the interaction governance model.

Ways to influence interaction

33. Depending on the situation different ways can be found to influence interactions. In this thesis the following approaches have been identified:

- Management of the social system development: selection by personality, development of knowledgeability, and development of discursive consciousness;
- Management of the social process: manage the decision-making as a process with a mix of individual choice and decision-making structures;
- Management of development of the practical consciousness of employees by giving and demanding account with motives, reasons and self-narratives;
- Management effectiveness at three levels: the agent as an embodied psychological frame; his immediate controllable frame, and the invisible transformational frame;
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- Manage by development a new transformational frame: developing signification and communication, coordination mechanisms, or values and sanctions;
- By imposing constraints or expectations: contract or values, role, budget, goal, purpose.
CONCLUSION

1. One major problem in organizations is the change of governance practice as a result of the substantial increase in the number of social relations of employees within as well as outside the organization. As a consequence governance of interactions deserves more attention. The interaction has been a major topic of analysis since Adam Smith, continued through Coase and the debate around the transaction cost approach. Also this thesis focuses on interaction as the unit of analysis.

![Interaction Governance Model](image)

Source: based on literature review, 2007

Figure 35 Interaction Governance Model elaborated
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2. The structure and dynamics of interactions have been investigated for a better understanding of governance practice. The *first conclusion* of this study is that it is possible to have a comprehensive view on governance (see figure 35 and chapter 4). In this model the individual attitude, knowledge and experience is dynamically connected to its social environment and the larger cultural context. Also specific types of intervention have been associated with the management of interaction. The *second conclusion* of this investigation demonstrates that it is possible to visualize what is being governed (see chapter 5 for the 10 governance objects) as well as how governance practice works (see chapter 6 on the common CIO practice). It was found that the major pattern of CIO practice is governance through emphasis on 'structure' and 'individual'. Much less has been focused on 'group' and 'transformational frame'. Although several CIOs have indicated that these are critical aspects as well, they were not sufficiently accounted for to become a common practice. Therefore the *third conclusion* is that 'group' and 'transformational frame' are potential areas in which to improve governance.

3. What has literature proposed to improve in CIO common practice?
   The conclusion is fair that many authors have struggled and abstracted away from social dynamics when discussing the topic of governance. However, the social aspect has often re-appeared as a
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topic in the critiques. The transaction cost approach versus the embeddedness of transactions in a social context. Market and hierarchy versus network organization. Contingency approach versus post modern approach to adaptive organizations. System thinking versus the social system theory. Analytical versus social constructivist approach.

![Business Strategy vs IT Infrastructure Model](image)

**Figure 35 Strategic Alignment Model**

4. This phenomenon to abstract away from social reality also appeared in research for the IT industry. The governance challenge in IT has been expressed by Henderson and Venkatraman among others in
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1993. What is the strategic role of IT within an organization. Their framework has provided CIOs a reference for strategic alignment and functional integration. It has focused on the interaction between artificial - not existing - entities: business strategy versus business operations, I/T strategy versus I/T operations and business versus I/T. Although a useful way to look at the context of day-to-day operations, it clearly has not provided an adequate response to the challenge, because it has been the number one issue on the CIO agenda for more than a decade as their most important challenge. This is not surprising, since the reality of business and IT as one holistic unitas been disentangled into entities that provide a frame for thinking in separate blocks (internal / external; strategy / operations; business / IT). This approach is not a reflection of reality because important connections and influences are excluded and easily overlooked. And, after all governance is not a technical exercise, it is about influencing people and real-life operations.

5. Maes has tried to resolve this problem which has arisen from rational thinking by defining an area in between the artificial four quadrants of Henderson and Venkatraman. He created a three-by-three matrix, in which the middle areas reflect the structure level of the generic framework. This structure level emphasizes the significance of tuning the organizational, informational / communicational and technological architectures and competencies. His insights are congruent with what the architectural approach (see
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the Netherlands Architecture Forum and in the international context The Open Group Architecture Forum) has developed since 1994: alignment of the different elements of an organizational system by systematically modelling what the characteristic elements and properties of an organization are, and how they relate to each other. However, the architects are also still struggling anno 2007 as to how to integrate the social dimension and the dynamics. This thesis has taken this challenge of integrating the social dimension with a governance model, because that would be more closely related to real-life operations and easier to apply. It is justified because organizational performance is not only dependent on the relation between its elements, but also on the social processes that connect them.

Figure 36 Generic Framework for Information Management
6. The results of this research show that Henderson & Venkatraman as well as Maes have been working with the wrong paradigm. Weill and Ross have almost fallen into the same trap. However, they have recognized in their latest book that leadership and social factors have a complementary role: two reasons why the paradigms have been missing the point. First of all, their frameworks have never resolved the operational issues, which supports the view that they have abstracted too much from reality and are not of much use for governance practice.

7. Secondly, technology and business should not have been separated, but should be envisioned as something holistic that can be managed only by managing social processes. Managing social processes is then bringing the organizational elements and the situation together in interactions. Since the situation is embodied in human beings and their interactions, governance should focus on interactions and the transformational frame. ‘Group’ is a useful concept to enlarge the scale of governance from groups towards network organizations, and to connect the thinking of the individual to the transformational structure.

8. What does this mean for the CIO? His governance practice should focus more on interaction than on ‘individual’ and ‘structure’. He should also understand and recognize that in IT three different social groups represent practices with each having their own transformational frame: stakeholders in strategy development,
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stakeholders in business application development, stakeholders in IT operations. It is these transformational frames that have to be managed. More attention to ‘group’ and more attention to the impact of events or policies on ‘interaction’ is needed.
SAMENVATTING

Probleemstelling
1. Digitale technologie voor informatie en communicatie heeft de management praktijk veranderd. Externe triggers en management observaties zijn toegenomen in aantall, bereik en dynamiek. De combinatie van deze aspecten veroorzaakte een crisis in besturing door middel van hiërarchieën. Er was een natuurlijke beperking aan haar effectiviteit. Het bracht enerzijds mogelijkheden om anders te gaan werken, niet gehinderd door geografische locatie bijvoorbeeld. Dit leidde tot een intensievere geïntegreerde praktijk, veroorzaakt door de nabijheid van verschillende hiërarchieën en de gelijktijdige aanwezigheid van verschillende roller gedurende de operatie. Anderzijds maakte de afnemende effectiviteit van contracten als een middel om controle uit te oefenen op management en medewerkers ten behoeve van aandeelhouders de ‘residual-rights’ en de instemming van de medewerker belangrijker. Hoe zijn managers hier mee om gegaan? Wat kunnen zij doen om effectiviteit in besturing bereiken? Deze studie is gefocust op de interne logica van de operatie binnen organisaties.

Onderzoek aanpak
2. Vanaf het begin is in deze studie aangenomen dat besturing het meeste effect heeft in interactie. Dit onderzoek voorziet in een model voor reflectie op de effectiviteit van interacties. Het model is
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ontwikkeld op basis van inzichten uit vier verschillende theoretische stromingen: de transactie kosten theorie, de contingency theorie, de systeem benadering en de sociale theorie. De praktijk van een specifieke groep managers – Chief Technology Officer – is met dit model onderzocht. Deze groep is geselecteerd omdat zij ingebed zijn in een netwerk van relaties waarin zij diverse rollen vervullen. Aangezien het in de digitale wereld normaal is geworden dat medewerkers verschillende rollen hebben, is te verwachten dat een beter begrip van hun besturingspraktijk ook inzichten oplevert voor andere posities in netwerk organisaties. Dit onderzoek levert mogelijkerwijs ook een referentie voor andere posities.

3. De oorspronkelijke opzet van het onderzoek ging uit van het ontwikkelen van hypothesen en deze te verwerpen of accepteren. Echter het onderzoek doel om een beter begrip te krijgen van ‘besturing in de praktijk’ in het algemeen, en van ‘effectiviteit in interactie’ specifiek, zou dan niet gehaald worden tenzij > 15 relaties tussen de elementen van het model onderzocht zouden worden. Dit is een onmogelijke opgave. De tweede reden waarom deze positivistische aanpak is verlaten is omdat in deze benadering de objecten van onderzoek teveel uit hun context zouden moeten worden geïsoleerd. In dat geval zou het onmogelijk zijn om het holistische karakter van besturing te onderzoeken. Aangezien het de ambitie was om het holistische karakter van de besturing praktijk zichtbaar te maken en tegelijkertijd te richten op de
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dynamiek van interacties, was deze benadering dus ook daarom niet geschikt. In de termen van Lee is gekozen voor de volgende benadering. Allereerst is een subjectief begrip ontwikkeld door literatuur te bestuderen en deze te toetsen aan de aannames en overtuigingen op basis van de eigen praktijk. Dit subjectieve begrip van besturing voorzag in een referentie model voor potentiële gegevens uit het veld. (het interactie governance model). Dit model heeft gediend als een referentie kader voor het analyseren van de verslagen die de CIOs hebben gegeven over hun management praktijk. Dit vormde de basis voor het vaststellen wat de 'normale' praktijk van de CIO is. De verzameling van data is gedaan door de methode van 'verhalen' – narratives – omdat deze het meeste de rijkdom van de lokale situatie behouden. De respondenten zijn niet geleid gedurende het interview. Zij hebben hun verslag gedaan aan de hand van een korte inleiding die de wereld schetst als een wereld die steeds meer op een netwerk lijkt, en daar de vraag aan te koppelen: wat doet u als u bestuurt? Hoe kunt u een dergelijk complex netwerk van interacties besturen?

4. Er zijn 11 CIOs geïnterviewd. De respondenten komen allen uit het EuroCIO netwerk, dat dit onderzoek op meerdere manieren heeft gesteund. De respondenten moeten minstens 10 jaar een management functie hebben bekleed, en bij voorkeur komen van een verschillende culturele achtergrond. Dit levert meer generaliseerbaarheid op. De ervaring van meer dan tien jaar heeft als voordeel dat de manager zowel de praktijk voor internet kent, als
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die er na. Dit heeft een gunstig effect op de scherpte waarmee een manager reflecteert, en daardoor op de kwaliteit van de 'narrative'. Op deze manier hebben de 11 CIOs een uniek verslag gedaan gebaseerd op hun eigen ervaring en kennis. Gedurende dit onderzoek zijn de verslagen geanalyseerd met het interactiemodel als referentie, en is een manier ontwikkeld om de 'huidige praktijk' te beschrijven. Verder is er een manier ontwikkeld om de potentiële praktijk te visualiseren, en verder nog een beschrijving gegeven wat een manager zou kunnen doen om de besturing praktijk te verbeteren.

Interactie model

5. Voor een systematische analyse is een model nodig. Interactie is a priori aangenomen als het kern object van besturing. Daarom zijn eerst de aspecten van interactie geïdentificeerd: individu, structuur en groep. Deze aspecten moeten echter niet geïsoleerd worden beschouwd. In systeem denken worden zij ook als een holistisch geheel beschouwd, dat niet in stukjes uiteen gerafeld dient te worden. Een karakteristiek van interactie is dat het resulteert in meer dan de som van de eigenschappen van zijn delen. De uitkomst heeft een 'emergent property'. Een lichaam is meer dan een set van organen, het kan ook liefhebben. Iets dat de organen afzonderlijk niet kunnen. Daarom is het bij de bestudering van governance praktijk belangrijk om de verschillende dimensies van het resultaat van operatie en besturing te onderzoeken. Vijf karakteristieken zijn
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in de literatuur gevonden. Het resultaat van interventie kan een effect hebben op rijkdom, macht, kennis, waarden en schoonheid.

![Interaction governance model](image)

Source: based on literature review, 2007

Figure 37 Interaction governance model

6. Aangezien interactie is ingebed en een onderlinge afhankelijkheid heeft met de socio-culturele omgeving was een plaats voor de context ook in het model nodig. Om dit te visualiseren is structuur opgerekt tot buiten het interactie domein. Het zou eigenlijk moeten lijken alsof het uit structuur voortkomt, of andersom versmelt met structuur in interactie domein. Op basis van de systeem theorie, is besloten een onderscheid te maken binnen de externe structuur tussen de controleerbare en transformationele structuur.
7. De transformationele structuur is het tweede sleutel domein van dit model, naast interactie. Dit is opgenomen om de historie en ervaring op te nemen, en te voorzien in een begrip dat eigen inzichten ook een plaats in interacties hebben. Verder is het om die reden ook een object voor interactie management. Het transformationele structuur conditioneert de interactie, maar is niet een zichtbaar deel, en kan alleen indirect beïnvloed worden door continue andere actoren te beïnvloeden op hun gezichtspunten, aannames, overtuiging of modellen van eigen voorkeur.

8. Nu zijn er nog middelen voor besturing nodig. Daarom zijn interventies gedefinieerd. De interventie moet ten minste een direct effect hebben op een van de drie aspect gebieden van interactie. Voor een indirect effect via het transformationele frame, is continue en consistent handelen nodig. Individu, structuur en groep zijn op zijn minst door een van deze drie interventies beïnvloed: leiderschap, organisatie van domeinen, en ‘leren’. Leiderschap heeft meer impact op het individu, organisatie van domeinen heeft meer impact op de structuur en daaruit voortkomende houding van homogene groepen, en ‘leren’ heeft een impact op individu en groep aspecten.

9. Het model sluit een proces gezichtspunt in: interacties kunnen worden geconditioneerd door interventies, en resulteren in een uitkomst. Interventies kunnen een impact op het transformationele frame hebben, en op langere termijn op de instituties van een groter
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sociaal systeem. Er zijn daarom twee effecten van handelen: uitkomst op korte termijn, en de institutie die wordt gevormd op basis van de feedback van de omgeving en de waarnemingen van uitkomsten.

10. In deze studie is gericht gezocht om een beter begrip te krijgen van de rol die ieder domein speelt in de besturing praktijk van CIOs. Als dit zichtbaar gemaakt kan worden, kan zowel de huidige praktijk als de potentiële besturing praktijk zichtbaar gemaakt worden.

Onderzoek conclusie

11. CIO praktijk legt meer nadruk op de controleerbare structuur en het individu. De inzichten gerelateerd aan groep en transformationele domein zijn wel herkend en toegepast door verscheidene CIOs. Dit was echter niet consistent, en onvoldoende om het te bestempelen als huidige praktijk voor alle CIOs. Slechts een CIO is geïdentificeerd als iemand die de sociale gezichtspunten meer expliciet toepast. Blijkbaar heeft de sociale theorie – het gebied waar de meeste van de gevonden inzichten in gegroepeerd zijn – waarde in hun besturing praktijk, maar is nog niet algemeen geaccepteerd als zodanig.

12. CIOs hebben diverse keren wel over het belang van leren en onderwijzen verteld, wat de gedachte dat de sociale benadering potentieel heeft voor CIOs ondersteund. Zij zouden daarom meer de inzichten van dit domein, het transformationele domein en de interventies kunnen toepassen.
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Algemene bevindingen

14. Sinds Adam Smith (1775/76), hebben academici onderzocht hoe ruil relaties bijdragen tot welvaart en rijkdom. Coase (1937) concludeerde dat de besturing van relaties met een hiërarchie gecoördineerd kon worden, welke dan een contracten per transactie inruilt voor een contract voor veel transacties tussen werkgever en werknemer; of, het zou gecoördineerd kunnen worden met het prijs mechanisme dat de ruil relaties in de markt coördineert. Sinds de jaren 30 is de onderneming het paradigma, en besturing heeft zich gericht op de besturing van de onderneming en hun ruil relaties. Sinds de jaren 80 is het paradigma opnieuw veranderd
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vanwege de acceptatie van digitale technologie. Nu is er een derde vorm voor coördinatie bijgekomen: het netwerk. De rode draad door deze mechanismes is dat ze de effectiviteit van relaties op de uitkomsten van activiteiten proberen te managen.

16. Aangezien besturing is bedoeld om uitkomsten van georganiseerde interacties te beïnvloeden, en deze interacties zijn gebaseerd op deelname van mensen, kan men ook beweren dat het object van besturing het sociale systeem is. Giddens (1985) heeft een theorie ontwikkeld over de productie en reproductie van sociale systemen. Zijn theorie is van groot belang geweest voor dit promotie onderzoek, omdat hij voorziet in een theorie die de integratie van de verschillende bestudeerde gezichtspunten mogelijk maakt. Hij verbond het individu, de ontmoeting en de eigenschappen van het socio-culturele systeem, en hij ontwikkelde een theorie over de ontwikkeling van sociale systemen. Hiermee kan het doel van besturen opgevat worden als het handelen om een sociaal systeem te transformeren naar een nieuwe toestand. Dit inzicht is bepalend geweest voor het vaststellen van het referentie model waarmee de realiteit zo veel mogelijk intact blijft gedurende het onderzoek.

17. Verder bleek in de literatuur dat de uitkomst van besturing op verschillende manieren kan worden uitgedrukt, hoewel het economische aspect dominant is. Andere kwaliteiten zijn macht, kennis, waarden en schoonheid. In dit onderzoek blijken de niet-economische factoren even belangrijk te zijn voor besturing. Gezamenlijk vormen zij het transformationele frame door de feedback effecten van uitkomst op aannames, percepties en overtuigingen welke op hun beurt weer voor een belangrijk deel de effectiviteit van interacties bepalen. Het transformationele frame is de opslagplaats van de menselijke geest, waarin voorraden ervaring,
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historie, aannames en overtuiging opgeslagen ligt. Het transformationele frame speelt een sleutel rol in de besturing van een sociaal systeem.

Model specifieke bevindingen
18. In de CIO verslagen zijn 10 besturing objecten geïdentificeerd. Blijkbaar zien de CIOs deze als hun belangrijkste momenten c.q gebieden van besturing. De tien objecten zijn: medewerker zelfmanagement; staf effectiviteit; autoriteit; proces; coördinatie; keuze en besluiten; onderlinge afhankelijkheid; groot programma; praktijkkennis. Ieder object is gerelateerd aan diverse cases, die weer geanalyseerd zijn binnen het kader van het interactie model. Als voor een object een inzicht uit de literatuur in voldoende aantal cases is ondersteund, wordt het beschouwd als een substantieel inzicht. Of, een inzicht dat behoort tot de huidige praktijk van CIOs voor dit specifieke object. De objecten waren verder instrumenteel in het ontdekken van de huidige algemene praktijk van CIOs. Huidige praktijk is wat CIOs vertellen wat ze doen, maar dat wordt geaccepteerde praktijk als meerdere CIOs dit inzicht hebben toegepast. Potentiële praktijk is datgene wat niet is ontdekt in de verhalen van de CIOs, maar wel is geïdentificeerd in de literatuur als relevant. In de volgende paragrafen wordt verslag gedaan van de highlights van huidige praktijk en potentiële praktijk.

19. Interactie. De CIOs zijn zich goed bewust van de afhankelijkheden tussen de interacties onderling en tussen de verschillende aspectgebieden van interacties. Verder hebben hun verslagen laten
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zien dat zij de economische aspecten van uitkomst als te beperkend ervaren als motivator voor besturing. De ontwikkeling van macht, kennis en waarden zijn even belangrijk. Van de 15 inzichten die gedurende de literatuurstudie zijn opgetekend, zijn er 6 als huidige praktijk gekenmerkt. Een manager heeft blijkbaar meer mogelijkheden om het klimaat voor interactie te vormen dan hij zich bewust is. Hij zou de rol als 'learning agent' op kunnen pakken; hij kan laten zien dat hij zelf bereid is te leren; hij kan laten zien dat hij zelf ook bereid is om geaccepteerde meningen ter discussie te stellen; hij kan interacties actiever gaan monitoren en beïnvloeden; hij kan evaluatieve dialoog gebruiken om een meer samenwerkende benadering te creëren. Deze manieren van beïnvloeden van interactie zijn niet expliciet terug gevonden in de verhalen van de CIOs, en kunnen daarom als een potentieel voor besturing gezien worden.

20. Individu. Substantiële inzichten laten zien dat het individu is zichtbaar gemaakt vanuit verschillende gezichtspunten: de persoonlijkheid; het praktijkbewustzijn; het communicatieve bewustzijn; de psychologische context van 'Zelf'. De verslagen hebben de bewuste toepassing van deze inzichten aangetoond in de huidige praktijk bij een groot deel van de CIOs. De respondenten waren echter niet expliciet over hoe deze kunnen worden toegepast voor meer effectieve interactie.
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21. Twee andere inzichten zijn ook als ‘huidige praktijk’ herkend. Een inzicht laat zien hoe het individu is gekoppeld aan de institutie, en een andere laat zien dat groep ontwikkeling kan worden bevorderd door inzichten te delen. Andere inzichten die kunnen worden opgevat als een potentieel voor verbetering van besturing zijn e.g. ‘Zelf’ is gevormd door acties, verhalen en sociale processen’, en laten zien hoe de huidige praktijk te beïnvloeden is. De CIOs zijn zich blijkbaar ook niet helemaal bewust van het inzicht dat ‘... de kiem van verandering is in iedere handeling”, wat iedere handeling kleiner of groter tot een kritische handeling maakt.

22. In totaal zijn 4 van de 16 inzichten ondersteund door de verslagen. De belangrijkste bijdrage in het domein individu is het zichtbaar worden van de connectie tussen het individu en de omgeving, of door directe interactie of door zijn socio-cultural context.

23. *Controleerbaar frame.* Een van de breed geaccepteerde modellen voor IT governance van Jeanne Ross en Robert Weill stelt een specifieke structuur voor. Deze structuur is statisch, en beperkt geeft het aan hoe met dynamiek om te gaan. In het interactie besturing model zou het geplaatst worden in de structuur. Hun commentaar op de dynamiek is dat er talloze mechanismen zijn, en niet een gelimiteerde lijst van de beste praktijk ervaringen bestaan hierover. Op basis van deze studie kan gezegd worden dat de controleerbare structuur belangrijk is, maar niet voldoende om een top performer te worden. Weill en Ross hebben aan het einde van

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hun boek hierop commentaar gegeven aan de hand van een uiteenstelling over het belang van leiderschap en management aspecten. Dit zijn nu juist de aspecten die toebehoren aan het transformationele frame en de ruimere socio-culturele context en die goed begrepen moeten worden om een top performer te worden. Hun inzichten lijken dus de conclusie van deze studie te ondersteunen dat het transformationele frame een noodzakelijk complement is.

24. CIOs hebben een gemeenschappelijke praktijk, door onderscheid te maken tussen het controleerbare frame van het transformationele frame en de context. De meeste respondenten erkennen dat de twee kunnen worden beïnvloed, maar het lijkt niet voor de hand liggend om er expliciet over te vertellen. Ook de inzichten hoe te handelen met onderlinge afhankelijkheid en hoe de verschillende gebieden te beïnvloeden zijn niet expliciet ondersteund.

25. Group. CIOs hebben niet expliciet gesproken over het managen van groepen, hoewel de IT gemeenschap in drie domeinen kan worden ingedeeld. Ieder domein vertegenwoordigt een groep, of sociaal netwerk van relaties: het strategische netwerk; het initiatief ontwikkeldomein en, de IT operatie. Het is een manier van kijken dat een hoog potentieel heeft om besturing te verbeteren. Groepen hebben specifieke sets van interacties die kunnen worden gevormd. Groepen hebben rollen, of hebben belangen. Groep interacties kunnen gevormd worden door onderwijzen (leiderschap) of leren,
beiden hebben impact op individu en groep effectiviteit. Leiderschap en leren kunnen daarom worden gezien als hoge impact interventies. De nadruk op besturing van specifieke groepen wordt zeker aanbevolen. Het benadrukt de besturing van verschillende groep rollen, vaak verschillende disciplines en met diverse belangen. Bovendien kan het vormen van groep effectiviteit worden gezien als een tussen niveau naar de vorming van het transformationele frame dat zorgt voor effectieve interacties.

26. Groepen zijn een goede basis voor het vormen van praktijk kennis en communicatieve bewustzijn, beiden deel van het continuüm dat het klimaat moet vormen voor effectieve operatie. Het controleerbare frame kan gezien worden als noodzakelijk voor een dergelijk benadering. In deze studie blijkt nu dat groep focus is kritiek voor effectieve besturing, maar aan de andere kant blijkt ook dat het erg onderbenut is in de praktijk.

27. Leiderschap. CIOs hebben een gebruikelijke praktijk. Zij delen het inzicht dat zowel interactie als het transformationeel frame onderwerp van besturing zijn. Hoe zij dit toepassen is niet verteld in de termen die de literatuur inzichten daarvoor aanreiken. Dit betekent niet dat deze inzichten daarom genegeerd worden. Het betekent eerder dat de taal uit de praktijk en de literatuur blijkbaar moeilijk verenigbaar zijn. De kern resultaten van dit onderzoek zijn de concepten die het individu verbinden met het transformationeel frame aan de ene kant, en individu aan groep aan de andere kant.
Deze concepten zijn kritisch voor een begrip hoe leiders uitkomsten beïnvloeden, omdat deze concepten zichtbaar maken wat leiders teweeg brengen.

28. In terminologie van deze studie beïnvloeden leiders interacties direct en indirect door deze concepten toe te passen. Direct door belanghebbenden uit te leggen hoe ze zich in interactie moeten gedragen, indirect door belanghebbenden te voorzien van een referentie kader dat leren ruimte geeft of dat het leren beperkt. De invloed hiervan op het individu en interacties voorziet in een basis voor ontwikkeling van het transformationele frame. Als interacties zijn geclusterd rond belangen groep (e.g. strategische afstemming; initiatief ontwikkeling; of, IT operatie) kan nadruk op groep effectiviteit een hefboom werking hebben naar het transformationele frame, en dus naar de effectiviteit van interactie en naar de uitkomst.

29. Dependence. De verslagen hebben ondersteund dat een allesomvattend begrip van business operatie is kritisch voor effectief bestuur. Dit begrip is het beste te ontdekken door de afhankelijkheden te begrijpen tussen individu, structuur en groep. Afhankelijkheden behoren tot de transformationele frame, maar zijn meestal gebaseerd op de controleerbare structuur. Deze bestaat bijvoorbeeld uit Key Performance Indicators (KPIs). De KPI structuur is expliciet, maar de manier waarop het is toegepast is dat niet. Dat is bepaald door de cultuur en het klimaat in de organisatie.
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Afhankelijkheden hebben een continue aanwezigheid, zijn vaak ontstaan uit de controleerbare structuur en hebben invloed op de performance. Het veranderen van afhankelijkheden is daarom een potentieel hulpmiddel voor interventie.

30. Learning. In dit domein is geen substantieel inzicht ontdekt. Daarom wordt voorgesteld om de inzichten uit dit domein op te nemen in besturing praktijk. Het is wel een beetje vreemd dat geen van de gevonden inzichten substantieel wordt toegepast. De grootste zorg voor CIOs is de schaarste aan de juiste kwaliteit professionals, en niet alleen technische vaardigheden. Bijvoorbeeld de vaardigheid om te richten op een taak omgeving in plaats van op een technische oplossing alleen is iets dat kan worden geleerd. Daarvoor is training-on-the-job nodig, niet externe training. Leren in sociale processen is daarbij effectief. Ingebed leren wordt in dit onderzoek herkend als een groot potentieel voor CIOs. Analyse van de interviews laat zien dat 10% van de insight-case verbindingen viel in het leren domein. Toch was dit niet voldoende om het in een gemeenschappelijke praktijk op te nemen. Daarom zijn de inzichten in het leer domein een waar potentieel voor CIOs. Zij kunnen worden bekeken in Appendix A.

31. Uitkomst. Veel basis is gevonden in de interviews dat 'uitkomst' niet eendimensionaal is, maar muldriedimensionaal. Daarom is het redelijk te concluderen dat dit een algemeen geaccepteerd idee is. Aan de andere kant is in de literatuur gevonden dat de economische
factor het meest dominante gezichtspunt is. Als een IT afdeling is ge-outsourced, is meestal het economisch perspectief dominant omdat het contract er op gespitst is om de structurele kosten te verlagen. Hoewel dit perspectief dominant is, wordt ook gerealiseerd dat flink wat kennis, waarden of macht nodig is om die economische doelen te bereiken. Dit blijkt bijvoorbeeld uit het feit dat vaak transformatie processen als onderdeel in het contract zijn opgenomen. Ook dit ondersteunt de waarde van het interactie governance model.

**Manieren om interactie te beïnvloeden**

32. Afhankelijk van de situatie kunnen verschillende manieren worden gevonden om interactie te beïnvloeden. In deze thesis de volgende benaderingen zijn geïdentificeerd:

- Management van de ontwikkeling van het sociale systeem: selectie van specifieke persoonskenmerken; ontwikkeling van kennis; ontwikkeling van communicatief kader.
- Management van het sociale proces: manage besluitvorming als een proces met een mix van individuele keuzes en besluitvorming structuren.
- Management van de ontwikkeling bij medewerkers van het bewustzijn van de dagelijkse praktijk door verslag te doen van en verslag te vragen van dagelijkse operatie op basis motieven, redenen en eigen beleving.
- Management van effectiviteit op drie niveaus: de agent als de belichaming van een psychologisch frame; zijn direct controleerbare frame, en het onzichtbare transformationele frame.
- Management van ontwikkeling van een nieuw transformationeel frame: ontwikkelen van 'betekenissen' en
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communicatie, coördinatie mechanismen of waarden en sancties.

• Management door beperkingen op te leggen: contract of waarden, rol, budget, doel, nut.
GLOSSARY

Action or Agency. The stream of actual or contemplated causal interventions of corporeal beings in the ongoing process of events-in-the-world. Or, is the notion of the event and its implications derived from its circumstances. Based on {Giddens 1976}

Asset specificity. An input used by a firm (or individual consumer) is highly asset specific if it cannot readily be used by other firms because of site specificity, physical asset specificity or human asset specificity. {Williamson 1981}

Administration. The way the alignment between technology, task environment and internal operations takes place. It is the human being that determines the variability of the administrative process. {Thompson 1967}

Administrative man. See economic man.

Bounded Rationality. The administrative man is limited by three factors: human physiology, his values and conceptions and the knowledge relevant for the job. {Simon 1961}

Choice. Is the product of interaction between the emotional, political and cultural dimension. {Gharajedaghi 1999}

Coalescing. A cooperative strategy as defined by Thompson. A combination or joint venture with another organization or organizations in the environment.

Commitment. An attitudinal construct described in terms of affective commitment, psychological attachment, identification, affiliation, and value congruence. parties share goals, values and an affective attachment, they can be expected to act instinctively for the benefit of one another. Commitment can also be generated through interlocking management. This creates webs
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of interdependency that should not be seen as controls and coordination, but rather as a glue that holds the network remarkably stable, cohesive and mutually oriented economic system. {Achrol 1997}

**Contracting.** A cooperative strategy as defined by Thompson. The negotiation of an agreement for the exchange of performances in the future. {Thompson 1967}

**Coopting.** A cooperative strategy as defined by Thompson. The process of absorbing new elements into the leadership or policy-determining structure of an organization as a means of averting threats to its stability or existence. {Thompson 1967}

**Coordination costs.** Are the costs of coordinating decisions and operations among economic activities in order to improve resource efficiency. {Clemons 1992}

**Corporate Governance.** Refers to the rules and regulations for control and supervision of the executive board on behalf of the owners of the company. Corporate Governance applies to the relationship between the shareholder and the management. {Strikwerda 1999}

**Counterintuitiveness.** System principle. It means that actions intended to produce a desired outcome may, in fact, generate opposite results. {Gharajedaghi 1999}

**Domain.** Domain consensus defines a set of expectations both for members of an organization and for others with whom they interact, about what the organization will and will not do. Domains are interdependent because they use different input under a regime of different institutions or produce different outputs for different markets. This pluralism is significant for complex organizations. {Thompson 1967}

**Decision-making.** Is drawing decisions from premises. {Simon 1961}

**Discursive consciousness.** Is the consciousness that presumes that the agent can give a coherent account of one's activities and the reasons for them. He
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is able to put things into words. Unconscious refers to not able to put things into words. {Giddens 1984}

Duality of structures. Is the meaning that social structures are both constituted by human agency, and yet are at the same time the medium of this constitution. {Giddens 1976}

Economic man. A purely rational man. He has a complete and consistent system of preferences that allows him always to choose among alternatives open to him; he is always completely aware of what these alternatives are; there are no limits on the complexity of the computations he can perform in order to determine which alternatives are best; probability calculations are neither frightening nor mysterious to him. administrative man, who is intendedly but bounded rational. He continues that both the economic and the administrative man strive for efficiency. However, the economic man is assumed to have complete rationality. The administrative man is limited by three factors: human physiology, his values and conceptions and the knowledge relevant for the job{Simon 1961}

Embeddedness. The situation that economic action – or any purposive action – is embedded in concrete, ongoing systems of social relations. {Granovetter 1985}

Enterprise Architecture. The High level logic for business processes and IT infrastructure reflecting the integration and standardization requirements of the company’s operating model. {Ross 2006}

Enterprise Core Foundation. Is the IT Infrastructure and digitized business processes automating a company’s core capabilities. The enterprise core foundation has four key elements: core business processes, shared data driving core processes, key linking and automation technologies and key customers. {Ross 2006}

Explicit coordination. A dimension of economic organization separate from the question of ownership. Explicit coordination is the extent to which decisions reflect and are tailored to a specific relationship, and is distinguished from implicit coordination of the “invisible hand” of market competition. Cooperation can be seen as efforts to increase resource
utilization and to create value, through closer explicit coordination with parties not fully owned by the Firm.\cite{Clemons 1993-2}

**Emergent property.** System Principle. Is the property of the whole, not the property of the parts, can cannot be deduced from properties of the parts. However, they are a product of the interactions, not a sum of the actions of the parts, and therefore have to be understood on their own terms.

**Governance.** Both Corporate and Internal Governance include four key processes: direction, accountability, supervision and executive action. *Direction* refers to formulating the strategic direction for the future of the company in a long term; *Executive action:* refers to the involvement in critical executive (enterprise wide impact) decisions; *Supervision:* refers to informing oneself and monitoring the performance of the management; *Accountability:* refers to giving account to the person who has a legitimate right. Three requirements are imposed on the performance of these processes: the requirement of *coordination* (the corporation is justified as long as the total value created is more than can be obtained through the market mechanism); *restructuring* through investments (at operating unit level has the right to invest without the intervention from outside); corporate level must create *added value* (a corporation is justified as long as it adds value to her Business Units). \cite{Strikwerda 1999}

**Governance object** The governance object is the thing, concept or event that has to be influenced to achieve an implicit or explicit end-goal. Governance is the action or choice that changes the course of development. (This thesis) Examples:

1. Coordination: the activity to align the different interests of two entities within or between organization(s)

2. Process: the sequence of activities that accomplishes a pre-defined output
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**Interdependence** Can be based on control and coordination or commitment. In the latter case it is a glue that holds the network remarkably stable, cohesive and is mutually oriented economic system to keep each other warm. Commitment and interdependence form the foundation for the development of social norms of governance in network organizations. {Achrol 1997}

**Internal Governance** Refers to the operations of the company. The quality of Internal Governance is the decision right of the Board of Supervisors. The profession, the execution and the accountability is the field of the Board of Directors. It is the task of the Board of Directors to create value through investments in technology, people and processes. {Strikwerda 1999}

**Internal Market Network.** Firm organized into internal enterprise units that operate as independent progit centers buying from, selling to, or investin in other internal and external units as best serves theirs needs and on market determined terms of trade, but subject to firm policy. {Achrol 1997}

**Interpretative schemes.** Are sets of methods and procedures that constitute a certain Praxis. {Giddens 1984}

**Institution.** A shared set of rules and notifications that identify categories of social actors and their appropriate activities or relationships. {Barley 1997}

**IT Engagement Model:** The system of governance mechanisms assuring that business and IT projects achieve both local and company-wide objectives. The model has three main ingredients: company wide IT governance structure (decision-rights and accountability); project management (formalized project methodology); linking mechanisms (process and decision-making bodies). {Ross 2006} p119

**Leadership.** Leadership is defined as the ability to influence those whom we do not control, and appreciating what we cannot influence. {Gharajedaghi 1999}
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Motivation. Is directly tied to the wants which prompt action. Motivation has a name like jealousy, fear, vanity, etc. Motivation is connected to the personality of the actor, and the actor can be aware or he may not be aware. {Giddens 1976}

Multidimensionality. System Principle. It is the ability to see complementary relations in opposing tendencies and to create feasible wholes with unfeasible parts. {Gharajedaghi 1999}

Narrative. Self-narrative is a form of social accounting or public discourse. In this sense, narratives are conversational resources, construction open to continuous alteration as interactions progresses. Self-narratives are cultural resources that serve such social purposes as self-identification, self-justification, self-criticism, and social solidification. It is through interacting with others that we acquire narrative skills, not through being acted upon. P188{Gergen 1994}

Network Organizations. Is Distinguished from a simple network of exchange linkages by the density, multiplexity, and reciprocity of ties and a shared value system defining membership roles and responsibilities. {Achrol 1997}

Transactional environment. Derived from the system principle openness. It is the elements that cannot be controled, and are also not completely out of sight. These are the elements that can be influenced. Gharajedaghi also notes that more leadership is required in digital organizations. {Gharajedaghi 1999}

Transaction cost. Costs that occur in the market when exchange takes place: discovering what the relevant prices are; the cost of negotiating and concluding a separate contract for each new transaction; avoid risks with a long term contract, which states to a limited degree what is expected from the supplier; take advantage of tax cost imposed by government; methods of price control are also a reason. {Coase 1937}

Open / closed system strategy of studying organizations: Open system shifts attention from goal achievement to survival, and incorporates uncertainty by recognizing organizational interdependence with
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environment. Closed system strategy seeks certainty by incorporating only those variables positively associated with goal achievement and subjecting them to a monolithic control network. {Thompson 1967}. // Open systems preserve their common properties as well as guard their individualities. This is determined by the culture of a system. {Gharajedaghi 1999}

**Openness.** System Principle. Means that the behavior of a living (open) system only can be understood in the context of their environment. Systems contain a domain that can be controlled, that can be influenced and that is non-controlable. {Gharajedaghi 1999}

**Organization.** Refers to the complex pattern of communications and other relations in a group of human beings. This pattern provides to each member of the group much of the information, assumptions, goals, and attitudes that enter into his decision, and provides him also with a set of stable and comprehensible expectations as to what the other members of the group are doing and how they will react to what he says and does. ({Simon 1961}, p16)

**Perception.** is not as an aggregate of discrete ‘perceptions’, but as a flow of activity integrated with the movement of the body in time-space. Thus it has been populated with anticipatory schemata with which the subject anticipates new incoming information. {Giddens 1984}

**Plurality.** System Principle. Simply maintains that the systems can have multiple functions and multiple structures and be governed by multiple processes; it denies the classical view of a single structure with a single cause-and-effect relationships. {Gharajedaghi 1999}

**Pooled interdependence.** Each part is dependent on and supports every other part in any direct way. Unless each performs adequately, the organization is jeopardized. Coordination by Standardization: establishment of routines or rules which constrain action of each unit. Option for relatively stable organizations. {Thompson 1967} See also Parker 2002.
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**Power.** The capability to secure outcomes where realization of these outcomes depends upon the agency of others. The use of power can best be understood in terms of resources or facilities. {Giddens 1976}

**Practical consciousness.** Refers to the awareness of one's circumstances related to one's activity. {Giddens 1984} In this thesis knowledgeability is often used as a synonym.

**Praxis.** Human practices are a series of regularized practical activities in accordance with sets (interpretative schemes) of methods and procedures. {Giddens 1976}

**Problem solving.** Four different ways to deal with problems. Absolution: to ignore the problem and hope it will take care of itself and go away of its own accord. Resolution: to do something that yields an outcome that's good enough, that "satisfices". Solution: to do something that yields or comes as close as possible to the best possible outcome, something that optimizes. Dissolution: to redesign either the entity that has the problem or mess, or its environment, in such a way as to eliminate the problem or mess and enable the system involved to do better in the future than the best it can do today, in a word, to idealize. {Ackoff 1999}

**Purpose.** Is the criterium against which an actor monitors his involvement. This is not clearcut because actors are involved in a continuous stream of purposive activity in interaction with each other.{Giddens 1976}

**Purposefulness.** System Principle. Purposefulness is the characteristic of a behavioral system that has a choice of means and a choice of ends. Choice is the product of interaction between emotional, political and cultural dimension. Rational choice is the domain of self-interest, or the interest of the decision-maker, not the observer. The emotional choice is the domain of the beauty and excitement. We do lots of things because they are exciting or challenging. Culture defines the ethical norms of the collective, of which the decision-maker is a member. The ethical norms are the constraining elements of the decision process. Purposeful systems are value-guided systems. {Gharajedaghi 1999}
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**Reason.** The logical connection between purpose/intention and the technical grounding of the knowledge that is applied as means. So to say the act is justified by the insight and knowledge that is applied. Thus reasons may be defined as grounded *principles of action* to which an agent keeps in touch for his reflexive monitoring of behavior. {Giddens 1976}

**Rationality.** Rationality is the decision-making by individuals in line with the objectives of the larger organization with the complete knowledge of alternatives, the insight in the impact of specific choices on the course of action and the possibility to evaluate the alternatives. {Simon 1961}

**Reciprocal interdependence.** The output of each, becomes the inputs for the others. Coordination by mutual adjustment: transmission of *new* information during operations. {Thompson 1967}

**Sequential Interdependence.** Both make contributions to and are sustained by the whole organization, and there is a pooled aspect to their interdependence. But, in addition, direct interdependence can be pinpointed between them, and the order of that interdependence can be specified. Unless the other acts, one cannot solve its output problem. Coordination by plan: establishment of schedules for the interdependent units by which their actions are governed. {Thompson 1967}

**Socio-technical system.** A system containing both human and non-human resources or facilities.

**Social norms of exchange.** Patterns of accepted and expected sentiments and behavior shared by members of an exchange system, having the force of social obligation or pressure. {Achrol 1997}

**Structuration.** Is the reproduction of practices, is the dynamic process whereby structures come into being. The study of structuration is to enquire into the process of reproduction to specify the connections between structuration and structure. {Giddens 1976}

**System.** A system is a whole consisting of two or more parts that satisfies the following five conditions: 1) the whole has one or more defining properties of functions; 2) each part of the set can affect the behavior or
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properties of the whole; 3) there is a subset of parts that is sufficient in one or more environments for carrying out the defining function of the whole; 4) the way each essential part of a system affects its behavior or properties depends on (the behavior or properties of) at least one other essential part of the system; 5) the effect of any subset of essential parts on the system as a whole depends on the behavior of at least one other such subset. Symmarizing and oversymplifying: a system is a whole that cannot be divided into independent parts without loss of its essential properties or functions. {Ackoff 1999}

System types. Four types can be distinguished according to the variable purposeful or not. 1) Deterministic systems: systems that have no purpose of their own and whose parts do not either are systems whose behavior is determined. Examples are automobiles. Deterministic systems can be open or closed systems. 2) Animated systems: have purposes of their own, but their parts don't. Animals, and human beings. 3) Social systems: have purposes of their own, contain parts that have purposes of their own, and are usually parts of larger social systems that contain other social systems. Examples are corporations, universities, societies. 4) Ecological systems: contain interacting mechanistic, organismic, and social systems, but unlike social systems have no purpose of their own. However, they serve the purposes of the organisms and social systems that are their parts and provide necessary inputs to the survival of the inanimate biological systems, such as plants that they contain. Such service and support is their function. {Ackoff 1999} p 21-29

Task environment. Task environments are a reduction of the scope of the environment. Those parts of the environment that are relevant or potentially relevant to goal setting and goal attainment. Task environment exist at least of four major sectors: customers; suppliers of material, labor, capital equipment and working space; competitors; regulatory groups. No two task environments are identical. Concensus about the task environment is critical for rational approach. {Thompson 1967}

Transformational frame. The transformational frame has a direct impact on interaction. It consists for example of the language and repertoires that practitioners use to describe reality and conduct experiments; or, the different role frames that are accepted. Differences in role frame help to
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determine what knowledge is seen as useful in practice and what kinds of reflection are undertaken in action. {Schön 1983} The transformational frame both constrains and empowers interaction, and furthermore it is influenced by the history of interactions. History and experience are important aspects of the interactions, since its length determines the strength of the relationship and its transformational frame. It is also influenced by the context, although this is often a delayed and indirect influence. The transformational frame may be perceived as a warehouse of beliefs, experiences, assumptions, history, appreciative systems, role frames, frame of learning, ..........

Trust. A firm's trust in its network partners is the belief that the partners will, without the exercise of influence or control, strive for outcomes that are beneficial for all member firms. Trust implies some sort of uncertainty and involves relinquishing some influence and control. {Achrol 1997}
APPENDIX A - INSIGHTS FROM LITERATURE REVIEW

Interaction

1. Interaction has three domains that jointly produce an outcome - individual, structure, group. These domains should not be dealt with in isolation, but as properties of the same interaction.

2. If one aspect area of interaction changes, the others should be reconsidered for fit: synergy, complementarities or trade-off.

3. Economic perspective is too limited for governance of interactions. Interactions are embedded in a social context, which is also a major determinant of its outcome.

4. Interactions should be considered as interdependent with other interactions.

5. Knowledge building takes place in interaction. There words get meaning. Managing interaction is managing knowledge building, managing shared insights and assumptions.

6. Knowledge can be stocked and re-used.

7. By organizing the process, the manager influences the development of meanings and ensures exchange of knowledge. Focus means that the knowledge development is more effective.

8. Every single action becomes a contribution to the outcome of the organization and therefore to governance practice. However, managers should be aware of delayed effects and feedbacks.

9. Once a manager is prepared to question his own assumptions and beliefs, he is prepared to learn. If he is not prepared to do this, he will reflect against his own beliefs, and stick to present performance.

10. A manager must understand the learning system in his organization. He is an agent of the learning system.

11. Interactions bring together several temporal situations: history, personal experience, expectations. Evaluative communication is more effective.

12. Questioning the conditions of the present situation and awareness of the near history and near future should be included in his
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c onsiderations to prevent too rigid mental models during periods of prosperity. Too rigid mental models cause sudden deterioration.

13. A manager should be aware of the institution, and the different contexts that are brought together at encounters. Arranging and shaping encounters is a powerful tool to enhance development.

14. Evaluative dialogue is a good tool to change from a silo approach to a more collaborative approach.

15. Role awareness and role support enhances performance. Neglect role performance may impact the interdependent roles and deteriorate performance.

Individual

1. The individual has three domains: personality, practical consciousness (knowledgeability) and discursive consciousness
2. The psychological context of the Self consists of personality, motivation, beliefs and assumptions and perception.
3. The Self is shaped by actions, narratives, social processes.
4. The individual is connected to the institution through action and the constitution constrains action – duality of structure.
5. A manager should ensure to put the right personality in the right context.
6. A manager should be aware of the role and place of each individual, and support it.
7. The seed of change is in every act.
8. A manager can discover the beliefs of an agent by asking why he has handled this way.
9. Reasons or beliefs are part of the psychological environment of the individual and may be influenced by the manager.
10. The manager is part of the observed object.
11. Communication is colored by the situation and the history of the observer.
12. Social systems are purposeful. A manager should know the purpose of each actor; this enables him to understand his behavior.
13. Three levels the manager can enhance performance: choose the right personality; increase practical consciousness; be discursive conscious (integers of language; narratives)
14. Group development can be enhanced by encouraging sharing insights and encouraging to joint development.
15. Get a better understanding of the actor by asking him for an account of his behavior and motives.
16. Initiate action or use narrative forms to trigger dynamics and development processes.

Controllable Structure

1. Structure is divided into three domains: controllable, transformational and context. Constraints, delay and impact on interaction differ. Transformation is the institution of the organization. Context is the institution of society.
2. The controllable structure as well as the transformational structure is subject of management.
3. Many parts of socio-cultural systems have free choice. Choice should therefore be at the heart of governance.
4. Behavior of socio-cultural systems can be described by five system principles and five dimensions.
5. Coordinate by ownership and contract type to prevent opportunism.
6. Choosing a task environment determines the scope, and implies a specific set of uncertainties and contingencies.
7. External coordination can be shaped through contracting, coalescing or cooperation.
8. Evaluate both coordination cost as well as transaction risks to decide on ownership.
9. Transformational structure provides the climate for lateral alignment and effective information processing.
10. The right type of personalities is needed in multi-authority and lateral organizations.
11. Four ways to develop the transformational frame: spontaneous strategy development, dynamic fit with environment, double loop learning, and Schumpeterian innovation.
12. Tensions arise in multidimensional systems and have to be managed instead of building defensive strategies against disturbances. See also Strikwerda on interoperability.
13. Different logics of prioritization should be applied in different market situations and operating logic for customers, capabilities, data, and technical infrastructure.

14. Skills and capabilities should also be developed to enhance the transformational frame. Skills and capabilities have to be present to link individual learning with organizational learning. see 56

15. A great variety of mechanisms exists to coordinate organizations.

**Transformational frame**

1. The transformational frame is a continuum. It is a not visible stock of practical consciousness, discursive consciousness, assumptions and beliefs, vision, history, experience and expectations.

2. The process of production of a social system is a continuous process, which is supported by three modalities: interpretative schemes, facilities and norms.

3. A manager can enhance the knowledgableness of an individual or group by developing: media, languages and repertoires; appreciative systems; overarching theories; role frames.

4. A manager can enhance the learning system by influencing the way reflection-in-action is practiced. Is it allowed to evaluate certain assumptions?

5. The social process maintains the transformational frame and the behavior of the social system.

6. Purpose and development are the major drivers of social processes.

7. Consciously develop discourse is a modality to enhance the transformational frame. Key items are language and generating conventions during the social process. Due to delay managers need focus and discipline.

8. Conventions enable understanding, not the individual subjectivity.

9. Discourse is the way actors give account of their activities, and the reasons for them.

10. Differences in language, appreciative systems, overarching theories and role frames are less aligned than before due to more interconnectedness between organizations. Complexity of management has increased.

11. Self-narratives are not just an account; they establish the grounds for moral being in a community.
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12. Action gets meaning through the circumstances within which it takes place. A manager should time actions precisely.

13. Acceptance of bounded knowledgeability creates transparency and enables reflection-in-action. This prevents uncorrectable errors.

Group

1. Language is the medium for both human understanding and to bring the contextual cues to the setting.

2. Managers have to organize the movement of meanings and storage of knowledge.

3. A manager should not focus on the individual but on the conventions being made in the group.

4. Managers can enhance the learning organization by developing the four major capabilities for learning: personal mastery; mental models; building a shared vision; team learning.

5. Style of decision-making creates transparency and trust in decision-making.

6. Authority development is a critical capability in digital organizations and multi-authority situations.

7. Authority development can be done through a process or building and motivating a vision.

8. Membership or role definition may be effective in digital organizations.

Intervention: leadership

1. A manager is a co-producer and observer of the object of governance at the same time.

2. Both the interaction as well as the transformational frame is subject of governance.

3. Managers should be aware of different boundary conceptions which are interdependent, and also have their own logic: legal, power, efficiency, competence, identity.

4. In digital organizations authority is less effective, and more focus is needed on norms and values.
5. Organization is seen as a human construction, seen as objective and unchangeable, but which can always be altered through human intervention.

6. Organization as human construction is based on numerous implicit and explicit assumptions.

7. Organization is distinct from organizational architecture. Organizational architecture includes the elements of physical means: people, technology, activities, management, information and encounter.

8. Organization is maintained through its social processes. This implies focus on imperatives, beliefs, cultural clues, general discourse, and choice.

9. Managers should condition interaction by explicitly organizing the controllable frame.

10. Managers should be aware that they can co-produce transformational frame, and they should realize that they have an advantage over others in the organization.

11. Managers should learn how authority in an organization is developed.

12. Managers may invoke dynamics by changing the information processing structure, the innovation approach, the learning system or by using narratives.

**Intervention: Dependence**

1. Manager's first task is to seek domain consensus to minimize dependence.

2. Managers should focus on the information architecture

3. Managers should focus on: vision, the distributed business operations; understand the implications for ICT infrastructure; understand the new business capabilities; capability to manage and coordinate distributed processes; understand how revenues can be shared.

4. Managers should focus on flexibility as a composite of management capabilities and organizational design.
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Intervention: Learning

1. Knowledge is not an individual possession, but lodged within the sphere of social relatedness.
2. Learning is closely related to the social processes in the organization.
3. The transformational frame and its institutional context have a central place in the learning process.
4. The organizational learning system influences severely the scope and direction of manager's reflection-in-action.
5. Managers function as learning agents for organizations.
6. Reflection in action draws on a stock of knowledge he has accumulated, adapting it to some present instance.
7. Part of the learning process is the development of individual as well as collective skills and capabilities to articulate personal vision or articulating one's own perception of reality.

Outcome

1. Outcome can only be valued in a cultural context.
2. A good narrative needs a valued endpoint. Only then the events in the narrative get meaning.
3. Only five parameters co-produce the properties of the system: power, wealth, beauty, knowledge and values.
4. Socio-cultural systems have five characteristics. These system principles are: multidimensionality, plurality, emergent property, counter-intuitiveness, openness.
5. Generating wealth is the most important determinant of failure or success. This throughput process is interdependent with the other dimensions of system outcome.
APPENDIX B.1 NARRATIVE STRUCTURE

*Establishing a valued endpoint. An acceptable story must first establish a goal, an event to be explained, a state to be reached or avoided, an outcome of significance, or more informally a “point”.

*Selecting events relevant to the endpoint. The endpoint more or less dictates the kinds of events that can figure in the account.

*The ordering of events. Once the goal has been established and relevant events selected, the events are usually placed in an ordered arrangement.

*Stability of identity. The well-formed narrative is typically one in which the characters (or objects) in the story possess a continuous or coherent identity across time.

*Causal linkages. It should provide an explanation for the outcome.

*Demarcation signs. Properly formed stories employ signals to indicate the beginning and the end. What is demonstrated by the case.
APPENDIX B.2  CASE EXAMPLE

*From skill to competency*

*Establishing a valued endpoint.* An acceptable story must first establish a goal, an event to be explained, a state to be reached or avoided, an outcome of significance, or more informally a "point".

The learning process is one of the great concerns I have. I am one of the CIO's that has brought forward two items: how can we make sure that the IT capability follows the needs of the business capabilities. And second how to develop that human capital. This is very hard. One has to be very prudent. We have to move from skill development to competence development. If the half of the staff does not have the potential follow, what shall we do then? Shall we stop the execution of this strategy? Do we have to continue investing in training skills?

*Selecting events relevant to the endpoint.* The endpoint more or less dictates the kinds of events that can figure in the account.

Get insight on staff development. Many staff from the seventies has never made the move to competence growth. They have never changed to task oriented practice. They also do not understand it.

I have asked the Exec to do a complete rebuild (40% of the total potential has been done). One of the units is younger than 30 years on average. Not on bits and bites, but they are much more oriented on the business. The staff is different: economists and engineers. The effect on the business is quite different.

30% of rebuild has to be done still. We don't know yet how: outsourcing or rebuilding?

*The ordering of events.* Once the goal has been established and relevant events selected, the events are usually placed in an ordered arrangement.

*Stability of identity.* The well-formed narrative is typically one in which the characters (or objects) in the story possess a continuous or coherent identity across time.

What do I do as a leader? I try to get cross functional teams, and force hem to communicate with each other. This is not easy. If one talks about IT, one is technologist. In the chief executive room I was introduced as: "now we get a technological intermezzo". The perception is close to the R&D
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technologist that behaves as the technologist and tester. Nobody is aware in the exec team that business has to feel oneself comfortable with the solution. They only look at the solution on the screen, but do not realize how the 8 people have put this together. IT should "put their technology coat off".

*Causal linkages. It should provide an explanation for the outcome.

Learning has three areas: structure, training on the job and networking.
Structure: how is the learning curve organized by HR?
- project management
- financial reporting
- understanding the business
- teambuilding and coaching
- MBA.

On the job learning: I don’t like to train people in Microsoft certificate. I prefer on the job training, and enabling them to educate oneself. If this is not sufficient then external training comes in.

Networking: third point is that our staff traditionally does not yet network outside their own organization and in other companies. This is not the culture.
Thus I grow the competencies.

*Demarcation signs. Properly formed stories employ signals to indicate the beginning and the end. What is demonstrated by the case?

How to deal with transformation from skill into competency structurally? We don’t have a coordinator to deal with it continuously. Once a year we manage and coach. What did you learn, what is plus or minus, what can you transfer to your colleagues?
APPENDIX C ANALYSIS OF LITERATURE INSIGHTS PER DOMAIN

Introduction

1. The literature review has yielded more than 100 insights. These insights form the potential governance of managers. This major insights are discussed more at length in this Appendix.

Interaction

2. Several authors {Clemons 1993-2} {Giddens 1984} {Granovetter 1985} {Gergen 1994} {Schön 1983} have discussed the embeddedness of interaction as a concept. Clemons has recognized the dynamics of interaction, but did not elaborate much on it. Granovetter has demonstrated this very well. He argues that economic action is embedded in a social context, that history and future expectations should be included in management practice. Granovetter has been convincing when he argued that we should look at interactions as a social object which should not be conceived as an isolated object. Hence interactions should not be conceived as isolated ones, but as interdependent interactions. Ferrin {Ferrin 2006} has demonstrated that third-party relations have a direct effect on trust and influence the effectiveness of interactions.
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3. Gergen contends that knowledge is not an individual possession. It is lodged within the sphere of social relatedness. This has brought him to the saying: “I communicate, therefore I am” instead of “I think, therefore I am”. Giddens has explained how knowledge is embedded in signification and meaning of words. And, social constructionists say that ‘word’ is the result not of individual action, but of joint-action. Therefore it is fair to say that interaction can be perceived as knowledge building vehicle. The consequence of this is that managing interaction is managing knowledge building, managing shared insights and assumptions. Since these are also recognized as determinants of individual agency, this should be considered as one of the key tools of management.

4. A concerted set of interactions between stakeholders, creates new meanings. This insight has several implications. Small actions trigger high impact development due to the subsequent sequence of actions that may be set in motion.38 Secondly every question managers ask their staff is in fact a learning opportunity, because it is an opportunity to shape meanings and concepts. Thirdly the manager may ask staff to work jointly or according to a specific procedure. Thus he ensures that a variety of insights and expertise are used and.

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38 Example: the advisor of the Minister of Home Affairs in the Netherlands has told me a story about how to get internet going in municipalities. The central government had subsidized the investment to create a web-page. The investment was Fl 25,000 (now around 12,000), a relatively small amount. However, it was very effective, because it started a complete development. Usually the web-site went live with a picture of the Municipality Hall or of the Counselor himself. However, when citizens wanted to approach the web-site, they did not find anything else. Counselors of course did not like the critique that it was of no use, and have started. To free budget for next years to develop a web-site which would attractive and enhance the services of the city to its citizens.
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By adopting this view every single action becomes a contribution to the outcome of the organization and therefore to governance practice.

5. Schön connected this idea to the reflective practitioner. The reflective practitioner takes action in accordance with his appreciation of the situation. Once he is prepared to question his own assumptions and beliefs, he is prepared to learn. If he is not prepared to do this, he will reflect against his own beliefs, not prepared to change behavior he would stick to the structural outcome of the existing operations. Schön notes that managers function as agents of organizational learning within an organizational learning system, a system of games and norms which both guide and limit the directions of organizational inquiry. A manager who understands this learning system has an advantage. He is aware which norms are bottlenecks to desired developments, and which are a leverage. He is also aware that asking the right questions, and setting the right procedure to resolve them is critical to have a good outcome.

Dynamics

6. Interaction is always a situation in which two persons are involved. Traditionally the two persons have always been at the same location. In the digital world they are often separated geographically and in time. Then location, culture or social context are misaligned without knowing. In the digital world it becomes more social diversity and
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misunderstanding is brought to the situation. Actors embody a stock of knowledge and experience, more recent context and the trends that prevail at that period in that space. Therefore context triggers dynamics. The impact of the 9/11 drama at the United States showed how ethnic groups during the period immediately afterwards have changed their attitude to each other. In a longer term it has changed the whole system of security at airports as well as the relation between people from different origin.

7. Besides events trends have also a dynamic impact. Sundaramurthy {Sundaramurthy 2003} has illustrated how several consecutive years of success may raise the potential for counterproductive behaviour. He argues that over time the combination of highly collective efficacy and strong identification may raise the potential for counterproductive defenses that hinder adaption to changing context. And on top of this an extended period of prosperity often reduces a firm's motivation to comprehend the causes of success, raising the likelihood of faulty attributions. Mental maps become rigid. Gradually faulty attributions and consensus seeking institutionalize the dominant coalition. A good fit between environmental conditions and current strategy may delay negative consequences. However, a sudden change in the environmental conditions may suddenly accelerate the low-performance cycle. These findings of Sundaramurthy confirm the importance of linking trends to one's appreciative system, or theories of beliefs. Managers
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have to be aware of these dynamics to reassure that their contribution has a positive impact on the outcome of interactions. Questioning the conditions of the present situation and awareness of the near history and near future should be included in his practice.

8. The role frame is according to Gergen one of the key parts of the transformational frame. He has found during his research that role identity can only be maintained if the other keeps also playing his role. If one participant does not play his role, this threatens the array of interdependent constructions. These conceptions of the dynamics in interaction converge in the notion of Schön who says that evaluative dialogue may be a significant step forward when collaboration should prevail over silos. He proposes that alignment between opposing or distinct interests may succeed much easier by evaluative dialogue.

Individual

9. Without individuals there is no interaction, but how should the individual be positioned in governance? Assume you are involved in Business and IT alignment, either at strategic level or in the area of initiative development. This domain consist of several ‘independent’ groups of professionals that have to deal with each other. Traditionally these groups do not easily communicate, because they have had different training, different experience and maybe even different cultures. The groups that are involved are management team members, business middle managers, IT developers, business
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analysts, business specialists, IT designers, technical infrastructure specialist and architects. What can managers or senior professionals do to enhance initiative development and improve the time to market? What can managers or senior professionals do to decrease the cost structurally?

10. Several authors {Giddens 1976} {Giddens 1979} {Gergen 1994} {Senge 1992} have investigated concepts around the individual. Giddens has linked the unconscious to the practical consciousness and discursive consciousness. Or in day to day terms: unconscious refers to the personality and personal experience and motivation; practical consciousness refers to the awareness and knowledgeability of one's own position in relation to the others; and discursive consciousness refers to the common language used in the task environment. With these concepts Giddens has connected the individual to the social system. These concepts enable managers to visualize their governance domain.

11. Finally Gergen argues that managers should be aware that they are not only observer, but also co-producer. And that the observer's communication is always coloured with the history and situation of the observer. The effectiveness of the actor depends on the drive for self-interest, the discursive history and the social processes. He argues that social processes are the most plausible driver to give an account of the Self. He considers the Self as part of the psychological area of the individual. Here is also included personality, motivation,
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beliefs and assumptions and perception. And, the Self is shaped by actions, social processes and narratives. The major take away from these three authors is that apparently it is possible to have a conceptual understanding of the connection between unconsciousness and social action, or between the area of the individual and the context.

12. Now the position of the individual in governance practice can be sketched. The individual has an unconscious and a conscious part. The unconscious part is a given, but has potential to develop. The conscious part is a high potential area for the manager. This part can be shaped by his own actions and processes. The manager is an alchemist of contextual events and trends, smaller and larger actions taken, enforced or triggered.

13. Giddens' theory provides a quite important premise: ...... the seed of change is in every act which contributes to the reproduction of any ordered form of social life. And also he argues that agents are embedded in a continuous stream of actions. In other words as long as there are actions there will be change, due to accidental or deliberate encounters. These encounters are not completely independent of the context. The agency depends on moral responsibility, which is a mirror of the context of moral justification. The account of agency is embedded in the context of moral justification, and it is by stating the reasons for his behavior that the agent expresses his beliefs. So managers can discover the beliefs
of the agent by asking him why he has handled his way. Managers can identify actor's reasons for behavior by asking him to express the reasons for it. These reasons or beliefs are then a condition which he may try to influence in order to enhance the course of action. By doing this he influences the psychological environment in the organization and of the individual. *Reasons or beliefs are part of the condition of the individual.*

14. Giddens further argues that the *skill* of the actor to have reflexive monitoring of action against insights, purpose(s) and learned procedures influences his action and the intention for outcome. The individual actor acts purposive. {Gharajedaghi 1999} {Giddens 1984} Purpose is the criterium against which an actor monitors his involvement. This is not clearcut because actors are involved in a continuous stream of purposive activity in interaction with each other. {Giddens 1976} Gharajedaghi has also included purposefulness as one of the five system principles. Purposefulness is the characteristic of a behavioral system, and this characteristic means that actors must choose between alternative means and ends. *Managers should therefore understand the purpose of the actors in a social system. This will render him the understanding of behavior of its participants, and hence the system as a whole.*
15. Purpose implies choice. Choice is based on motivational factors related to personality (jealousy, fear or anger) and knowledgeability (or: practical consciousness). Choice whether to submit to moral orders depends also on the mixture of sanctions. {Giddens 1984} Choice is according to Gharajedaghi the product of the tensions between emotional, political and cultural dimension. {Gharajedaghi 1999} The emotional choice is the domain of beauty and excitement. We do lots of things because they are exciting or challenging. Culture defines the ethical norms of the collective, of which the decision-maker is a member. The ethical norms are the constraining elements of the decision process. Purposeful systems are value-guided systems. {Gharajedaghi 1999} The three dimensions he has
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distinguished are based rather on contextual factors, than individual factors.

16. Rational as opposed to emotional choice is the domain of self-interest, or the interest of the decision-maker, not the observer. {Gharajedaghi 1999} Simon, however, has related rationality to the organizational perspective in which the manager operates. Rationality {Simon 1961} is the decision-making by individuals in line with the objectives of the larger organization with the complete knowledge of alternatives, the insight in the impact of specific choices on the course of action and the possibility to evaluate the alternatives.

17. In this model the researcher suggests that the manager can have influence at these levels. At the unconscious level by choosing the right personalities. At the practical consciousness by enhancing the awareness of one's situatedness through communication of the explicit - sometimes still implicit - strategy. I am inclined to add awareness of the individual philosophy as regards vision, values, purpose and sense of place, which determines the knowledgeability of the actor. At the discursive level the manager can train the individuals by asking them to share insights or produce jointly some policy document. By doing this staff would go through a learning curve and develop a new discourse based on the new interactions that take place.
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18. Other notions that depict individuals is the self-narrative and situatedness. Situatedness refers to the time-space embeddedness of the individual in the historical and cultural context. (Giddens 1976) (Giddens 1984) Furthermore to appreciate the circumstances of an actor the manager may focus on the self-narrative account by the actor himself. A self-narrative is the account an actor can give of his own behavior as regards his reasons (rational and based on knowledgeability) and his motives (related to emotions and personality characteristics). (Gergen 1994)

Dynamics

19. Differences at the level of the individual cause dynamics in social systems. The differences in capabilities between the different units or actors play a role. One may think of a business process in which one party is well matured, and the other party is still in its infancy. Or, the difference in actor power that is brought to the situation, e.g. bargaining power. The transformative power may be much more for one actor, as compared to the other. This makes a difference not only for the outcome of interaction, but also the influence these outcomes will have on the organizational environment. Forrester talks about finding the high leverage points, meaning that each social system has certain points at which the impact of change is substantially higher than at other points. Also narratives cause dynamics. Gergen has for instance identified different patterns of narratives, which generate different dynamics. For instance the
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regressive narratives serve as an important means for motivating people (including oneself) toward achieving positive ends. {Gergen 1994}

Structure

20. Structure may be divided into three hierarchic levels: a controllable frame, a transformational frame and a contextual domain. They relate as a hierarchy. Contextual domain is the least controllable. Usually impact is very much delayed. Sometimes events have high impact without much delay: Brent Spar, 9/11. The transformational frame is closer. Impact of actions or events may have more visibility. The controllable frame is what can be imposed as a rule or condition for interaction. Although the context and transformational domain are less controllable, they constrain the lower level of the structure. For all three levels “duality of structure” applies.

21. Level identification is useful to understand the dependence between different areas. The consensus about a domain enhances its development and transparency. The business and IT alignment area can be divided into three domains. At strategic level there is interdependency of IT with as well as among these domains: Marketing & Sales, Operations, Finance and Customer Interaction. Also at tactical level interdependencies exist. Both at the business and IT side different professional disciplines have to be aligned for development and implementation of new ways of working. In larger projects this is done deliberately by developing a unique temporal
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project approach. However, in smaller and medium projects this is often embedded in continuous processes. The premise of this thesis is that it is more effective to manage the interactions between the participants, then to focus on the performance of the parts or projects independently. This raises a question: what are the specific properties of interactions that can be controlled? For a better understanding premises, conditional aspects and dynamics of the controllable and transformational frame are discussed in the remainder of this section.

Structure: controllable frame

Premises

22. The controllable frame is a set of properties of relationships in a social system. For organizations it is a means to an end, since it enables or constrains the performance of the organizational processes. During the literature review several categories of properties have been identified: coordination mechanisms, governance and ownership to distribute decision rights, dependency structure, information processing structure, and skills and capabilities. {Williamson 1981} {Ghoshal 1996} {Clemons 1993-1} {Powell 1990} {Thompson 1967} {Galbraith 1973} {Ross 2006} {Gharajedaghi 1999} {Schön 1983}{Ross 2006} These categories can be merged into two only - coordination mechanism and interdependency - since both governance and skills and capabilities can be considered as elements of a coordination mechanism.
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23. With respect to production and reproduction of social life Giddens {Giddens 1976} explains the difference between practices (set of actions) and structure. He argues that practices are situated doings of a subject. Structures on the other hand have no specific socio-temporal location, are characterized by the absence of a subject, and cannot be framed in terms of subject-object dialectic. Although a manager cannot deal with a structure, he may still be aware of a structure and also focus on the change of a structure. He can do this by continuously acting in a consistent way over a longer period of time. Therefore, author adopts structure as the subject of a manager. The manager can develop the structure, and has to reckon with it. How can a manager develop or influence the properties of a structure?

24. If the structure is something to manage, it is useful to have a reference for identification of the properties of the system. Gharajedaghi has developed a framework to describe social systems. He recognizes five system principles: openness, purposefulness, multidimensionality, emergent property and counterintuitiveness. The acknowledgement of these five principles helps understand the behavior of social systems in a digital world. {Gharajedaghi 1999} These five principles may be adopted as major characteristics of the transformational frame of the social system.

25. He has also distinguished five system dimensions: power, wealth, beauty, values, knowledge. These dimensions cannot be seen
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separately, but they form an inseparable result. The outcome of socio-cultural systems arises from properties of its independent parts, as well as from its interdependent properties. However, the outcome is not the sum of the properties of the parts and the relationships. It is more. Since many parts of a socio-cultural system have free choice, and choice is one of the determinants of the outcome of interaction, the manager who focuses on choice can influence the outcome of the social-system. Influencing choice should be at the heart of governance practice: directly or indirectly.

26. Empirical support for the notion that it is more effective to manage the properties of relationships than those of the parts, has been found by Lawrence & Lorsch. (Lawrence 1967) They have found after lengthy empirical research that integration is a better single predictor for outcome than differentiation alone. However, the parts – if we can see employees as parts – should not be overlooked either. Some CIOs have indicated that they have changed the demographics of their department substantially to get characteristics that are well prepared for the challenges.

27. Many authors have analyzed the structure of organizations. {Clemons 1993-1} {Williamson, Oliver E. 1979} {Thompson 1967} {Lawrence 1967} {Galbraith 1973} {Ross 2006} {Volberda 1992} {Senge 1992} {Giddens 1984} The structure can be divided into a part that describes the interdependence and a part that describes the coordination between the interdependent parts. First we will have a
closer look at the types of coordination identified during the literature review.

28. Williamson has analyzed the type of transactions, and suggests that ownership is critical. His dominant premise is that opportunism of actors is the most important problem to deal with and that authority is the best response. He proposes to control through different types of contracts that impose authority on the two parties involved. On the other hand Thompson emphasizes that organizations have a problem to understand the environment completely, and that they can resolve organizational issues partly through acceptance of bounded rationality, and then strive to resolve that bounded rationality. He argues that the central problem to complex organizations is to cope with uncertainty through creating parts with (near) certainty. These two approaches are not mutually exclusive. In the terms of Lawrence and Lorsch Thompson differentiates and Williamson integrates.

29. Thompson argues that three types of uncertainty: generalized uncertainty, contingency and interdependence of components. The task environment determines the scope in the environment, the set of contingencies and uncertainties. Choosing a domain means choosing a set of dependencies. Thompson calls this the resolution of the generalized uncertainty, which is based on the larger technological and market environment. To resolve contingencies Thompson suggests three alternative strategies to manage the dependence from
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the task environment: contracting, coopting and coalescing. He also proposes three strategies to cope with internal dependence: here the organization seeks resolution through coordination of the actions of its components. Thompson suggests three alternative ways of coordination: pooled, sequential and reciprocal coordination. Due to the adaptation Clemons has extended the scope for coordination mechanisms. He introduces explicit coordination, that reaches over boundaries of ownership and resolves transaction risks. His approach conditions both the controllable and transformational structure.

30. Galbraith emphasizes the information processing capability of the organization, and argues that more multi authority and lateral relationships are required to cope with market dynamics. He argues that the domain consensus determines the levels of hierarchy in business and information structure. In multi-authority and lateral organization structures the effectiveness of information processing depends largely on three factors: type of task (e.g. uncertainty or complexity), the involved person and his capabilities, and the climate in which problems can be resolved.

31. The contribution of Volberda is that he demonstrates that technology and culture are determinants for the controllability of an organization, but not the only determinants of outcome. Management capabilities are as important. He has identified four capabilities that enhance the control of organizations: the applied
form of strategy, the environment / organization fit, the learning framework and the type of innovation and entrepreneurship. He bridges the contingency theory and systems thinking. System thinking emphasizes for instance the capability of learning or the capability to link the individual assumptions and beliefs to the institution of the organization. These four capabilities can be considered as the means to develop the transformational structure. Volberda has defined the capabilities to create flexibility.

32. Many years later Weill et al. have looked for a resolution of information processing and decision-making in the business IT alignment area. They have elaborated a decision-making structure, which is based on a few simple principles. First the type of decisions are distinguished, then the style of decision-making and then the situation specific mechanisms that are required. \{Weill 2004\} Although she did not elaborate on it, one may perceive that each decision-making domain consists of a distinct network of stakeholders. In this thesis a network is a set of relationships and a pattern of interaction with its own controllable structure and transformational frame. Each domain has also its own dynamics. Therefore the manager may conceive the decision domains as different objects.

**Dependence**

33. Dependence is critical for the performance of systems. To understand dependence is not an easy task. It demands a thorough
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understanding of the organization in its context. The manager can influence dependence by choosing the task environment. This determines the type of dependence and creates an opportunity to resolve the dependence by coordination.

34. Several dependency types have been identified during the literature review: functional dependency; commercial dependency; task environment/praxis; system interdependency; plurality of function; multidimensional dependency. Functional dependency has been defined more detailed by Tillquist: a goal in one domain cannot be achieved without the service of another domain. {Tillquist 2002} Tillquist has demonstrated how dependencies change when new technology is adopted in car repair services. It illustrates that IT is a driver for change of dependencies, and as a result also for change of activities because new ways of working are discovered over time.

35. Commercial dependency has been illustrated by Clemons. {Clemons 1993-1} He discussed the implication of building a large application with Wall Mart’s largest supplier. It did not only make Wall Mart more vulnerable to the that supplier, it also provided the opportunity to benchmark other suppliers. This rendered Wall Mart with more power over suppliers. This changed the degree of bounded rationality.

36. The task environment exists at least of four major actor groups: customers; suppliers of material, labor, capital equipment and
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working space; competitors; regulatory groups. No two task environments are identical. Consensus about the task environment is critical for a rational approach from an organizational perspective.\{Thompson 1967\} The twin of task environment is Praxis. Praxis is a series of regularized practical activities in accordance with sets (interpretative schemes) of methods and procedures. Praxis is the social perspective of a homogeneous social system. Homogeneous task systems are easier to manage, than heterogeneous task systems. For instance in the telecom services the service provisioning to the top 10 large accounts is quite different in sales Praxis, marketing, channels, customer service from the Praxis of the small and medium sized accounts.

37. Galbraith has developed strategies to resolve the multidimensionality of heterogeneous systems by optimizing the information processing capability for non-standard or exceptional situations. However, the dynamics and therefore the number of occurrences (mass customization) increased so much that this approach was not adequate anymore, and a more systemic approach was required to resolve the structural problem of sharing information between hierarchical levels. A new type of coordination was required. This lead to network organizations and more attention for systems thinking.

38. In the area of systems thinking techniques have been developed to cope with the interdependency in heterogeneous systems. In this
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field researchers have discussed several types of dependency: system interdependency; plurality of function; multidimensional dependency. Gharajedaghi \{Gharajedaghi 1999\} has included plurality as one of five system principle. This principle simply maintains that the systems can have multiple functions and multiple structures and be governed by multiple processes; it denies the classical view of a single structure with a single cause-and-effect relationships. \{Gharajedaghi 1999\} This leads to the dynamic perspective of organizations in which tensions have to be managed instead of defensive strategies against disturbances. Understanding the dependence well supports managers to forge new structural conditions that may enhance organizational performance.

Dynamics

39. The controllable structure should be based on the different types of dependence, the management capabilities and the organizational capability. Ross has developed a way to visualize the the organizing logic for business processes and IT infrastructure. They call this the enterprise architecture. They have proposed to determine the logical priority of customers, capabilities, data, and technology for specific business areas. This is an integrated way to visualize the combination of different elements of an organization as one comprehensive logic. Galbraith has proposed to choose one aspect of an organization to focus stragey formulation: information processing. Williamson and Thompson have proposed different
coordination mechanisms as forms of governance for internal as well as external dependence. What types of coordination mechanisms are found in the literature?

**Coordination Mechanisms**

40. Fourteen coordination mechanisms have been mentioned during the literature review: price; incentives (economic, learning, social); hierarchy or authority; moral order; regularized expectations; exchange of knowledgetability; trust and social norms; ascertain resources and reciprocity; network flexibility; internal market economy; democratic hierarchy; incentive for information sharing; information architecture. These coordination mechanisms can be divided in several categories: economic, social, organizational and technical (information architecture). {Granovetter 1985} {Clemons 1992} {Clemons 1993-1} {Powell 1990} {Achrol 1997} {Galbraith 1973} {Ross 2006} {Ackoff 1972} {Giddens 1984} The economic, organizational and technical categories can be imposed by managers who have authority, and they are rather controllable. However, the social mechanisms have a continuous character, and have impact on the transformational frame - the psychological environment.

41. Besides these coordination mechanisms several authors have also mentioned skills and capabilities as a means for coordination. This is recognized by authors in the field of systems thinking as well as from the social constructionist field: developing an organizational capacity; feedback; personal vision, 'building shared commitment';
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throughput process; produces social artifacts as products of historically and culturally situated interchanges among people; produces intelligibility; integers of language is created through a pattern of relationships and interactions within these relationships; actions cannot be interpreted without the analysis of its social and cultural embeddedness; development of meaning. {Volberda 1992} {Forrester 1971} {Forrester 1991} {Senge 1986} {Gharajedaghi 1999} {Gergen 1994} {Giddens 1984} As discussed before we consider the skills and capabilities as a specific type of coordination mechanism. Developing the quality of the skill is part of a coordination mechanism.

Governance

42. Ownership deals with decision-rights: power/authority; contract; conflict; hierarchy. Who will take the decision? This is the world of solving conflicts or how to deal with risks. Many definitions can be found. In this thesis the governance definition of Strikwerda {Strikwerda 1999} will be followed, because he positions corporate governance and internal governance as two different domains, with two different praxises. He argues that governance has four key processes: direction, executive action, supervision, accountability. Both corporate and internal governance include these four key processes. Direction refers to formulating the strategic direction for the future of the company in a long term; Executive action: refers to the involvement in critical executive (enterprise wide impact)
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decisions; *Supervision:* refers to informing oneself and monitoring the performance of the management; *Accountability:* refers to giving account to the person who has a legitimate right. Three requirements are imposed on the performance of these processes: the requirement of *coordination* (the corporation is justified as long as the total value created is more than can be obtained through the market mechanism); *re-structuring* through investments (at operating unit level has the right to invest without the intervention from outside); corporate level must create *added value* (a corporation is justified as long as it adds value to her Business Units). Strikwerda poses coordination mechanisms as a means and pre-requisite for governance. The literature review conducted for this thesis resulted in a large variety of ways to govern interactions: purpose; goal congruency; reciprocity; reduce risks by contract; decision-making domains; decision system; market, hierarchy and network; roles and rules. There is a large number of coordination mechanisms.

43. In summary the major categories that visualize the properties of a structure from a managerial perspective are: coordination mechanism and dependence. Dependency to characterize the type of issue that has to be resolved, and coordination mechanisms that provide means to resolve the issues. Dependency and coordination are ying – yang. There is a many to many relation between the two categories. Coordination mechanisms are part of the controllable
structure, but due to the social dimension that is always included it has influence on the transformational frame.

Structure: Transformational Frame

44. Maybe the best way to appreciate operations is to distinguish visible and invisible objects. The visible parts are the human being and to a certain extent the controllable structure. The invisible part is the unconsciousness of the human being, his knowledgeability, the human discourse and the transformational frame of the situation. The transformational frame is the result of actions and interactions. The results can be described with practical consciousness, discursive consciousness, assumptions and beliefs, vision, history, experience and expectations. It can be conceived as a stockage of these items. The transformational frame is to a large extent defined by social theory, and is a continuum.

45. Schön (Schön 1983) has investigated interaction and relationship from a practitioners perspective. He explained how the relationship between a professional and his client evolves, and has identified four constant factors that rule the outcome of interaction. Although he has investigated the relationship between a professional and a client, there is no reason why the same dynamics would not apply to groups, or social networks and communities. This has inspired author to conceive the organization as a social system, which brought me to Giddens. Giddens has demonstrated how social systems continuously (re)produce themselves. This has to be
understood by a manager. He is in fact reproducing the social system – the organization – in order to achieve a better performance.s

46. According to Giddens the production and reproduction of a social system is a continuous process. This process of production and reproduction is supported by three modalities: interpretative schemes which are drawn from signification and support communication; facilities which are drawn from an order of domination and applied through the use of power generate outcomes; norms which are drawn from a legitimate order and applied in interaction to reconstitute it. The modalities may be applied by managers to the different levels of the social system: individual, group and larger social network. These three dimensions visualize the key properties of the structure at each social level: signification, domination, legitimacy. These properties can be changed and form a basis for governance.

47. Schön has elaborated the frame from the perspective of interaction between two persons. This interaction has a frame that is not visible, but determines to a large extent the outcome of interaction. Both individual as well as institutional aspects are involved. In the terms of Giddens these four categories can be combined in one word “knowledgeability”. This is the practical consciousness of the individual about the social relations, rules and behavioral aspects of his environment. Schön has identified the following categories:
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- The media, languages, and repertoires that practitioners use to describe reality and conduct experiments;
- the appreciative systems they bring to the problem setting, to the evaluation of the inquiry, and to reflective conversation;
- the overarching theories by which they make sense of phenomena;
- the role frames within which they set their tasks and through which they bound their institutional settings. The differences in role frame help to determine what knowledge is seen as useful in practice and what kinds of reflection are undertaken in action.

48. The frame determines to a large extent the learning process. The frame imposes the limits and potential of a learning process. Both Schön as well as Volberda have concluded this. It is the beliefs in the system, or expectations that determine the way inquiries will be allowed on the effectiveness of the operations. So the transformational frame has two outcomes: degree of knowledgeable and implication for the learning system.

49. Another premise is that conventions in a relationship enable understanding. In social systems agreement is based on a common perception. The more the participants can articulate the perception and give account of their behavior, the more knowledgeable they are and the more effective they will behave in interactions. Giddens argues that the account on the world is maintained through social processes, and is not based on objectivity. Hence managers should focus on the social process to get the transformational frame in the
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shape that is required. Ackoff argues that purpose and development are the two major drivers for social processes.

50. Gergen has taken a view on the transformation of social systems. This provides complementarities to the theory of Giddens on The Constitution of Society. He argues that conventions of relationship enable understanding what has to be achieved, not the individual subjectivity. Therefore the performance of language in the public sphere is very important. Discourse is the way actors put things into words when giving an account of one’s activities and the reasons for them. In this thesis discourse is therefore a critical part of the transformational frame, and should be considered as object of the manager as well. The other way around the manager may appraise certain discourses as if he evaluates patterns of cultural contexts. Discourse can be influenced by organizing or (re-)structuring processes.

51. If the transformational frame is considered the most important part of the managers object, what should he strive for then? What are the qualities he should want to achieve? First of all we need concepts that visualize the effect on the transformational frame. Personal context and group context can best be described as Schö)n did in the former paragraph. It consists of the discourse of the community, the appreciative systems, the overarching theories and the role frame that applies. Examples of concepts that may be included in these
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aspects are: trust; bargaining power; network purpose, commitment and interdependency; sense of family, belonging and security; acceptance of bounded rationality; task uncertainty; domain consensus; allowance for experiments; learning awareness; understanding of social systems; acceptance of the prevailing praxis; fashion. Except for the concept of fashion, all these factors have been drawn from the literature review. They have in common that they stick in the human mind as perceptions, and are the basic way for agency through choice.

52. There is a large difference between the transformational frame 20 years ago compared to the frame in the digital world. Before individuals were connected to their department and the immediate contacts in and around his tasks. By contrast he is now connected to international groups, communities, interest groups, and has many knowledge bases at his disposal. Differences in language, appreciative systems, overarching theories and role frames are less aligned than before. The transformational frame has certainly become more complex and less visible. This may be defined as the transformational frame beyond the assigned task. Social processes within the social networks and communities of interest are critical for the primary tasks of actors. This has also been supported by the study of Ritter on innovation. {Ritter 1999} {Ritter 2003} If they support each other there is a win-win, if they diverge it will result in lower performance.
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53. Direction setting and the communication and pursuance of it are key part of the transformational frame. These can set motion in actors in the same direction. However, setting in motion is not sufficient. Continuously driving the benefits is needed as well. This is necessary for emergent phenomenons which are reproduced continuously online and in real time. Discipline is needed for its reproduction. Within these ongoing dynamics actions get meaning. Action gets meaning through the circumstances within which it takes place. Hence a manager can improve influence by e.g. better timing of actions.

54. The concept of narratives is also important. Gergen argues that narratives can put things in motion. He has discussed a few narrative forms: stability narrative, regressive narrative, progressive narrative, tragic narrative, comedy-romance and heroic narrative. The last one as a series successive progressive-regressive phases. The progressive and regressive narrative form clearly imply a directionality the former anticipating further increments and the latter further decrements. Self-narratives should not be considered as a derivative of past encounters, reassembled within ongoing relationships; once used, it establishes the grounds for moral being within the community.

55. The third cause of dynamics is the situation itself. A situation can be brought about by human behavior. Sometimes situations embed the
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conditions for uncorrectable errors. Uncorrectable errors can be expected if the following situation exist:

- when the understanding of the situation or the situation itself is uncertain, vague, or ambiguous
- when the situation is uncertain it is not sure what expectations one ought to have;
- when the description is vague or ambiguous, it is not directly testable
- when one's system of understanding is inconsistent the very same outcome may seem an error or not an error
- when the espoused theory is inconsistent with the theory-in-use then an outcome may be a match with the first and a mismatch with the second.

When this is the case reactions are stimulated in a certain direction. The expert believes he is presumed to know, and he believes he must claim to do so regardless of his own uncertainties. He keeps a distance, but conveys a feeling of warmth as a sweetener. Furthermore he may look for defense and status in the client's response to his personal persona. In this traditional perception of a contract in which professional and client strive for control, or try to evade from the expert advice, the professional is pushed towards going beyond his expertise. The client may try to weaken or gain control through a second opinion. Since it is not done to admit uncertainty, reflection-in-action is not possible in this model. It reinforces the uncorrectable errors. Schön has identified another model for professionals in their client relation. This model prevents uncorrectable errors. Evaluative attitude in the relationship and a
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joint learning approach is more effective and prevents uncorrectable errors.

Group

56. Managers should think in groups, if the characteristics of relationships are conceived as as major determinant of outcome. Groups may be homogeneous or not. A group may consist of one type of stakeholders, or it may consist of different stakeholders dependent of each other. (The staff of a large marketing & sales department versus the staff that is responsible for the strategy development in an organization). The more heterogeneous the group the more important the transformational frame becomes. In the field of IT it is almost always a heterogeneous group.

57. At the strategic level three groups or networks of stakeholders can be distinguished: strategic stakeholder network, initiative development stakeholder network and IT Operations stakeholders. {Agarwal 2002} Each network consists of a set of relationships. Each set of relationships needs direction, needs motivation and needs alignment. {Kotter 2001} In a homogeneous group these are partly similar. However, in a heterogeneous group this must be developed.

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For governance two perspectives are particularly interesting: how do groups change, and what are the origins of group characteristics. Giddens (duality of structure), Gergen (produce intelligibility) and Volberda and Ritter (innovation practice) have emphasized the ongoing process of interactions. The other authors have provided insights which group conditions may be influenced as a means to achieve a specific outcome.

According to Gharajedaghi the major determinant of the characteristics of processes are the assumptions and imperatives of the dominant culture or paradigm in use. Giddens has shed some light on the connection between these assumptions and imperatives on one side and action on the other side. He contends that language is above all the medium of human practical activities both for mutual understanding and to bring the contextual cues to the setting. Integers of language are created through a pattern of relationship and interactions within these relationships. It is a means to communicate meanings and to share knowledge, and as such it is critical in production and reproduction of structure. In other words language is a carrier to move knowledge and meanings around from one place to the other. This is exactly what happens in complex organizations. Managers have to organize the movements and storage of meanings, knowledge and contextual cues.

In the context of business and IT alignment this is a major challenge. At strategic level knowledge and insights have to be generated.
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continuously and jointly. Once the insight is adequate e.g. on the implications of a new technology, the decision-making should be organized. Decision-making is often a string of decisions that have to be made at different levels in the organization, in different domains, at different styles and at different dynamics. The alignment process organizes the flow of insights, meanings, stocks of knowledge and decisions. (Based on {Weill 2004}) The process has to influence choice, because choice is at the heart of governance practice in social systems. This implies that the result of the mix of emotional, political and cultural environment is being shaped. It can do this by ensuring that during the process conventions are accepted and made for further action. This is contrary to the assumption that the individual subjectivity determines what has to be achieved.

61. Therefore the manager should not focus on the individual subjectivity, but on the conventions that are being made during the alignment process. Understanding is not a mental act originating within the mind but a social achievement taking place within the public domain. What are the potential actions manager can take to improve the performance of the organization? What are the conditions he can influence for better outcomes?

62. In social systems the process may be perceived as learning process, with only one goal: improve performance. How can we make sure that learning of the individual is linked to the groups learning, and thus enhance the organizational development. Systems thinkers
emphasize the beliefs and assumptions that prevail with the stakeholders. Influencing these has a great impact on operations. (Senge 1992) (Gharajedaghi 1999) Senge has elaborated the capabilities that are required to link the individual learning to group learning. He argues that the set of capabilities for a truly learning organizations are: personal mastery, mental models, building a shared vision, team learning. Other authors have emphasized aspects as coulance for other cultures, social norms and the attitude of lateral decision-making. These are aspects that a manager can develop by his actions, his planning or the processes he chooses for problem resolution.

63. The dynamic aspect comes in when the alignment process is developed. In that process the triggers for meetings or decisions are determined. As we have seen the process is largely determined by the local culture or paradigm. One way to create awareness of the preferred dynamics, is expliciting the style of decision-making. The style determines how decisions are prepared, and who has the decision right. In a business monarchy for example the Chief Financial Officer takes the decision, in a duopoly two disciplines are jointly accountable for decision making. Styles regulate the collaboration between different hierarchic levels and different domains in an organization. The dynamics determine the degree of a shared understanding on how things work.
64. Achrol has proposed to pay attention to different ways of rising authority. This can be done through developing managerial skills and proof them, but also through building and motivating a vision. This is what happens when company wide issues have to be tackled by large groups of stakeholders. If this is accepted as a way to develop large programs for instance, companies would become better in developing large programs. Another factor that determines the willingness of a group to learn or experiment is having an explicit policy about it. In organizations where most staff is innovative and curious, a more constraining policy is needed to prevent chaos, in a rigid company a policy that encourages to think and act out of the box may be needed. The policy is then a way of formalization. Finally membership is a factor that may be considered for formalization. Some roles may be more effective when formalized (e.g. a champion for the preparation of a large program in large organizations). It gives focus, and guides authority development that is badly needed to achieve multi-stakeholder decisions in digital organizations.

Performance

65. Because outcome can only be valued within its cultural perspective outcome can be quite controversial. When is a business successful? When profit has been maximized? When the employees are happy? Gergen has discussed performance from a social perspective. When discussing the criteria to understand the structure of narratives, he
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proposed that "establishing a valued endpoint" should be included as a criterion for a good narrative. He argues that the selected endpoint is typically saturated with value. It is understood to be desirable or not desirable, intended or unintended, good or bad. Then he continues that events do not contain intrinsic value. He contends that only within a cultural perspective can "valued events" be made intelligible. This is congruent with the concept of outcome as proposed by Gharajedaghi.

66. Gharajedaghi has formulated five dimensions to visualize outcome: values, power, beauty, truth and wealth. He argues that only five parameters coproduce the future of a social system. These form a comprehensive set of variables that collectively describe the organization in its totality: wealth, knowledge, beauty, values and power. Gharajedaghi has furthermore defined five system principles of socio-cultural systems. One of these principles relates to a generic characteristic of performance in open systems. They produce emergent properties. Emergent property is the property of the whole, not the property of the parts, and cannot be deduced from properties of the parts. They are a product of interactions, not a sum of the actions of the parts, and therefore have to be understood on their own terms.

39 Gharajedaghi has used the word truth. However, based on the premise that knowledge is based on the convention between two or several stakeholders, the notion of truth gets close to that of knowledge. In this thesis knowledge has been used throughout.
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67. He distinguishes two types of properties. Type I properties express the independent properties of a system: color, surface, material. Type II properties the interdependent properties: love, happiness, success, failure. They cannot be deduced from the properties of its parts, or measured. Gharajedaghi reasons that the emergent properties are the product of interactions among several elements, which signifies a dynamic process producing a time-dependent state. Therefore the emergent phenomenon is being reproduced continuously online and in real time. Happiness, success and life are not one time propositions; they have to be reproduced continuously. The emergent property and interdependent properties visualize the performance and results of governance. Gharajedaghi further argues that the main function of a business is to produce the throughput, or in general terms to generate and disseminate wealth. It is the effectiveness of this process that ultimately results in success or failure. This supports the relevance of the aspects discussed during the investigation of interaction.

Intervention

68. Intervention is the direct or indirect agency of managers that influences the course of action, which enhances the performance of organizational operations. Intervention assumes that it has an impact. Agency can be interpreted very broadly and may be direct or indirect: just being present as the boss may be seen as agency; not being there, as well; structuring before operations is agency;
imposing rules of conduct on interaction through using authority or charisma is also agency.

69. In this investigation three types of intervention will be discussed. They have been derived from the three domains of interaction by questioning: how can one influence the domains of interaction - individual, structure and group. Choice and behavior of individuals can be influenced through leadership: direction setting, motivating, inspiring. Structure can be influenced through changing the task environment, but also through influencing the transformational structure. Group behavior can be influenced through changing the learning frame or change the rules and pattern of interactions. Both learning and leadership have a potential to influence group behavior. It is assumed that intervention co-produces the transformational frame, and conditions the other domains of interaction. The co-production is assumed because a manager is observer and participant at the same time. Hence, his choice to be present or be a distant observer both have an impact on the structure or operations.

Leadership

70. How should leadership be positioned in a governance model? Is the manager the only leader, or should we consider leadership a distributed property of the system? Here the leadership definition of Kotter is used. {Kotter 2001} Leadership is about coping with change by providing direction, alignment and motivation. This is distinguished from management which is about coping with
complexity by planning, organizing and controlling. Kotter argues that both are necessary for success in an increasingly complex and volatile business environment.\[^{40}\]

71. Several questions should be answered to understand the position of leadership as part of governance. What is the object of the leader? How should he perceive organizations? From literature some premises have been derived. First of all some remarks about the boundaries of organization have to be made. Governance in a digital world is applied to open social systems. This implies that a leader should be aware of the environment. This is in accordance with the view that organizations are alike network organizations. Boundaries get unclear. They are not limited anymore to legal boundaries. This is supported by the view Santos has proposed. He has identified besides legal boundaries four other boundary conceptions that are related to each other, but not similar: power boundaries, efficiency boundaries, competence boundaries, and identity boundaries. Each conception has its own logic in operations, but they are also interdependent. {Santos 2003}

72. Secondly the relation between organization and interaction needs further clarification. Digital organizations resemble more like open network organizations, than hierarchies. This implies that authority is less effective and social norms and values should be considered as

\[^{40}\text{In this thesis leaders and managers have been used in an inter-exchangeable way.}\]
an effective alternative. In this thesis organizations are perceived as a set of relationships with recurrent pattern of interactions between its actors. As discussed in Chapter 3 relationships and interaction is a more effective place to manage than individual actors. Hence, if the performance is the ultimate goal, then interactions within a certain boundary have to be managed. Thirdly we have discovered that governance based on a pure economic view, is too limited. Social aspects should be included and more systems thinking to deal with delays in the social system and to influence choice. Leaders should be aware of the different dimensions of outcome.

The object of leadership

Source: based on literature review, 2007

73. Finally based on the four perspectives in Chapter 3 and the definition of organization given by Strikwerda, who adopts a social constructionist perspective, an organization may be perceived as a human construction, seen as objective and unchangeable, but can
always be altered by human intervention. Organizations become obsolete due to changes in the environment and of its participants. As a human construction it is based on numerous explicit and implicit assumptions. A complete knowledge of all these assumptions never exists. {Strikwerda 1994} Therefore, he further argues, decisionmaking is socially-determined by bounded knowledgeableability, not by bounded rationality. This is based on the assumption that people can never translate their – always only semi-conscious – intentions completely and precisely into the mean called organization.

74. His view coincides well with the governance model we have defined. The object of governance has been sub-divided into separate domains based on the degree of controllability: the encounter; the controllable frame; the transformational frame and the context. The nature of the relation of a leader to each domain is distinct: he is both observer and part of the transformational frame; he is both observer and part of the controllable frame, and he is the observer of majority of encounters within the organizational setting. The following match of the definition of Strikwerda with the domains in the governance model can be made: Strikwerda's organization – which is a human construction - comprises the transformational frame, and the controllable frame. These belong to the structure and are the human construct of an organization. The two frames influence directly and indirectly the result of the interaction during
the encounter. On the other hand encounters need people. Encounters are resided in practice, situated settings.

Subject of governance

75. In the digital world organizations have become a complex composite of people, technology, activities, management, information and encounters. With the adoption of IT operations it became so complex that a new profession was needed to deal with its challenges: architecture in a digital world. This profession originates from the early 90s. Only recently architecture approach is accepted by organizational management as a necessary element in governance. {Rijsenbrij D., Schekkerman J., Hendrickx H. 2002} Architecture fits also well in the definition of the tasks of managers, as defined by Kotter. {Kotter 2001} For these reasons it is relevant to look at this profession in this thesis. Within The Open Group (an international organization that strives for boundariless information flow based on standards) the IT Architecture community has recognized its importance and has started a Working Group. This group has been requested to investigate how to position business and IT architects in the digital world of organizational governance.

76. "In San Diego in January 2007 this working group defined what the object of the architect should be from an organizational viewpoint: "Organizational architecture is the structure of an organization described by its elements and their relationships in a context; recorded to the necessary level of detail in order to discover and record made
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decisions and support further decision-making by the stakeholders." Two assumptions: the observer determines the boundary. Organization structure consists of the following elements: People, Technology, Activity, Management, Information, and Encounter. Four elements mentioned in the definition have been adopted from Simon {Simon 1961} as the elements that are necessary and sufficient to shape an organization: people, technology, activity, management. He argued that each organization is built on these parts. However, the adoption of IT has changed the fundamental characteristic of organizations.

77. Some argue that the era of digital organizations in which information technology is ubiquitous, this set of elements of organization is too limited to give a proper account of the characteristics of an organization. It should be extended with two other notions: "encounter "and "information". Information as critical part of an organization can be derived from the systems theory, which distinguishes two types of systems: energy bonded mechanical systems and information bonded socio-cultural systems. The definition of the working group implicitly assumes that the organization is a socio-cultural system, because people are involved. This implies that information is critical element to describe the characteristic of the system. {Gharajedaghi, Managing Chaos and Complexity, 1999}

78. Secondly information may be seen as a separate element, because it can nowadays partly be separated - if it can be formalized - from the
human actor and relocated in operations. The separation is done by information analyst, and a wide array of methods and techniques is still being developed to formalize information and share it between different domains. The effectiveness of the distribution and re-use of information, and its impact on the knowledgeability of actors cause new dynamics. Therefore information should be included in a description of the characteristics of an organization.\textsuperscript{41}

79. The other new element that should be included in the description of an organization is encounter. Encounter has been added as additional element because systems thinking and social theory propose that the properties of the relationships as well as those of the elements are necessary to describe the social system. \{Giddens 1976\}\{Giddens 1984\} Gharajedaghi 1999} Another reason to include encounter is because it visualizes the dynamics of a system. During the encounter time-space co-location is realized, embodied in actors. \{Giddens 1984\} With the notion of encounter the dynamic aspects are now recognized a well. With these elements the characteristics of co-location can be described.

80. Furthermore it is a unique characteristic of digital organizations that differences between actors in history, experience and future expectations are brought together without movement of actors, and

\textsuperscript{41} The attention for the inter-operability between domains is illustrated by the working group at The Open Group and the research being done by the European Community and Microsoft. \{Strikwerda 2006\}
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this causes a sequence of actions that can not be expected in non-digital organizations. It should therefore play a key role in governance practice. Encounter as element is critical for another reason. It includes the continuous character of change because each encounter contributes potentially to the production and reproduction of a social system – “duality of structure” of Giddens.

Other insights

81. Several other useful insights have been identified. Number one insight is that social processes determine the degree to which a given account of the world is maintained. So if a manager wants to maintain the present situation, he should be aware of the social processes that maintain or disturb it. And, according to Gharajedaghi are the characteristics of the organizational processes defined by assumptions and imperatives of the dominant culture or paradigm in use for the organization. Another useful insight is that cultural contexts become apparent through the general discourse. Therefore appraisal of certain discourses is as to evaluate the patterns of cultural contexts. {Gergen 1994} Furthermore Gergen has argued that understanding is not a mental act originating within the mind but a social achievement taking place within the public domain. This is a critical insight if for direction setting groups have to get the same beliefs and assumptions. Finally it was argued by Gharajedaghi that influencing choice should be at the heart of the governance practice.
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82. Based on these premises the leader has several means of intervention. He may intervene in the co-location of different actors with different back-ground. He may intervene in the social processes that produce and reproduce the social system. He may intervene by changing the domains and their interdependence. He may change the boundary conception. He may also intervene by changing the learning model of the organization. The object of the leader should be the transformational frame. All these interventions are aimed at influencing choice to enhance group behavior and performance.

83. Leadership becomes manifest through conditionining situations in encounters. The manager has several ways to do this. The conditionining of the controllable structure may be done by explicitly communicating the roles. This may be effective when multi-authority and lateral relationships exist. Another way to deal with this is to develop the right climate to resolve problems. Then focus is put on the transformational frame. Other ways to influence the effectiveness of interactions is by imposing the governance style explicitly or by installing mutual adjustment, which keeps the interest in balance. Achrol has proposed to ensure that the transformational frame of network organizations a certain common feeling of family, belonging or security exist which enhances the effectiveness. He has also proposed that it is probably more sensible to identify how authority in an organization is developed.
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84. IT causes a continuous need for adaptation. First of all Information Technology is a critical factor in organizational design and related innovations and causes a continuous need for adaptation of organizational structures. {Galbraith 1973} Other factors that cause dynamics is the way innovations take place. Allowing for experiments creates an atmosphere in which innovation has a chance. Another way to initiate dynamics is to be very much aware how the organization should learn. The organizational learning system directly influences the managers attitude against reflection-in-action. The learning system has an impact on the development of both the controllable structure and transformational frame of the organization. Finally leaders may use narratives as a means for initiating dynamics. It is a means to motivate people to enact on events.

Dependence

85. Dependence exist when one actor cannot accomplish one assigned goal without the input of another actor. Coordination is needed to coordinate the utilization of resources and interoperability at different levels between actors. The most rudimentary means of coordination have been price, hierarchy and network organization. Price coordinates the utilization of resources in the market. Hierarchy coordinates the resource utilization within an organization by contracting once and transacting many times. Network organizations are based on a common interest that binds
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the network together. In network organizations social norms and values are more important for coordination than in hierarchies and markets, and authority is less effective.

86. Thompson has investigated how to cope with uncertainties and proposed solutions for internal and external dependence. Basically his approach sought flexibility in response to internal and external uncertainties. The most important action a manager can do is to search for the best positioned domain, that minimizes the generalized uncertainties, contingencies and internal uncertainties. Almost fifteen years later Volberda has investigated how organizations can cope with turbulent environment. How to keep the best possible fit between organization and environment? He has analysed aspects of flexibility and proposed basic strategies to get the right mix of flexibility. Volberda has built on the ideas of the contingency theory. He concluded that flexibility is much about creating the right context, management capabilities and organizational capabilities.

87. However, the development of IT has had much impact on governance, and hence on the architecture of organizations. The standardization of IT for boundariless information flow has created opportunities to re-structure and re-use information and organizational processes. Also the means and tools that enable Service Oriented Architectures create a great potential. Businesses may now be divided into many small independent services, that are
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integrated at higher levels. This creates more dependencies on the one hand, but also much more flexibility because now re-use becomes possible. The new dependencies get defined at a more detailed level, and are reassured by agreements (Service Level Agreement).

88. This new set of technological tools cause a change in the way information has to be stored and used. Galbraith has demonstrated already that information structure is one of the key components in organization development. It determines the levels of hierarchy required in an organization. Organizations need also several new capabilities to coordinate between the different parts of the organization: envision the distributed business operations; understand the implications for ICT infrastructure; understand the new business capabilities; capability to manage and coordinate distributed processes; understand how revenues can be shared.

89. What can we learn from this if we accept that dependence and coordination mechanism are the two main categories to cover? The value from the contingency theory is that still parts with (near) certainty have to be found. Thus changes are limited, and resources can be exploited without continuously spending budget for adaptation. This is basically the idea of the Service Oriented Approach. This approach creates parts that survive any change in the market or the technology. From Galbraith the idea that the information processing is a major determinant for the shape of the
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organizational structure. The Service Orientation is revolutionizing the information landscape. Subsequently the organizational structures have to be adapted. It has a high impact on the distribution of tasks within organizations and sectors. Volberda has argued that flexibility is a composite of management capabilities and organizational design. From a strategic point of view different flexibility mixes can be distinguished. He argues that finding the right fit in a turbulent environment is predominantly a question of organizing and creating context, which is a task of strategic management.

90. Basically managing dependence is finding the right context, the stable parts and the organizational, semantic and technical coordination between these parts. As discussed before the coordination has an economic and social dimension. Managing the collaboration between the different parts is now done at the service level instead of the organizational level. Since services are re-used by other organizations as well for each service contracts have to be identified. Here the transaction cost theory is valuable in understanding what the risks for service consumers are and how they can be dealt with. Major challenges remain now in the composition of the different services, and the trust a party will support when changes have to be made. The performance depends now on the vertical and horizontal alignment between actors.
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Standardization, differentiation and modularization play an important role in that coordination.

Learning

91. Learning is an important aspect of governance in network organizations, because it refers to the assumptions and imperatives that are accepted in the different stakeholder groups. Learning generates assumptions and imperatives that play a major role in choices that individuals take. Learning is about creating knowledge, or disseminating knowledge (teaching) to other participants in the organization. Gergen conceives knowledge not as an individual possession, but lodged within the sphere of social relatedness. Learning is in this thesis conceived as the result of social processes and joint-action. Since learning is closely related to social processes, the frame and its institutional context have a central place in the learning process. The manager should therefore pay attention to phenomena for which there is no off the shelf theory.

92. The organizational learning system influences severely the scope and direction of a manager's reflection-in-action. Managers function as agents of organizational learning because he is the actor who allows questioning the accepted assumptions or not within an organizational learning system. This system of games and norms of learning both guides and limits the directions of organizational inquiry. Reflection in action draws on a stock of knowledge he has accumulated, adapting it to some present instance. In fact he
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functions as an agent of organizational learning, is extending or restructuring the stock of knowledge for future inquiry. Part of the learning process is the development of individual as well as collective skills and capabilities to articulate personal vision or articulating one’s own perception of reality.
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Invitation

Tuesday 11th of December 16.00 I will defend my thesis

"Governance in the practice of the Chief Information Officer"

It is my pleasure to invite you to be present at this event.

Harry Hendrickx

Location: Aula of the University of Tilburg
Defence: 16.00 - 17.00
Reception: afterwards in front of the Aula
Route: http://www.uvt.nl/

Uitnodiging

Dinsdag 11 december 16.00 zal ik mijn proefschrift verdedigen

"Besturing in de praktijk van de Chief Information Officer"

Met veel genoegen nodig ik u uit om dit bij te wonen.

Harry Hendrickx

Lokatie: Aula van de Universiteit van Tilburg
Verdediging: 16.00 - 17.00
Receptie: aansluitend voor de Aula
Route beschrijving: http://www.uvt.nl/
Interactions are critical for governance in a complex and dynamic world. How can managers influence these interactions? What are the insights that guide interaction management? How has the internet influenced operations and the effectiveness of interactions? These questions gave guidance to studying the practice of CIOs, and to an extensive literature review: transaction cost approach, contingency theory, systems thinking and social theory. The researcher wanted an answer on what should be added to commonly accepted governance frameworks in order to be successful in governance practice. The study has found a clear answer to this. CIOs have applied a social approach of management in quite a few situations, but also the majority of CIOs have underutilized this approach. This study provides a model for interaction governance, and describes the common practice of CIOs. It shows that during the past two decades the prevailing frameworks for resolving the challenges of IT have missed the point. He proposes a different way of looking at operations in a digital world.

The author has had positions in IT since 1985, first as a marketer at an R&D organization, then at a hardware and software sales organization. Since 1992 he has been a consultant in business IT alignment in a large global consulting company. He has always had a focus on organizations as a business and enterprise architect, and has been involved in the state of the art developments in this area since 1997. Lately also in The Open Group. He joined the professional board on this topic at Capgemini and has been an initiator and board member of the Netherlands Architecture Forum from 2001 to 2006. On this topic he has published many articles, given presentations and contributed to a book on enterprise architecture as a means of governance. His work as a strategic consultant combined with enterprise architecture brought him automatically into the outsourcing sector. In 2007 he joined EDS and became Chief Technology Officer.